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TRANSACTIONS

—OF THE—

MEDICAL SOCIETY

OF THE STATE OF

NORTH CAROLINA.

Forty-Second Annual Meeting.

—HELD AT—

Goldsboro, N. C.,

MAY 14, 15 and 16, 1895.

WILMINGTON, N. C.:
LEGWIN BROTHERS, PRINTERS AND BINDERS.
1895.

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TIME, PLACE AND OFFICERS OF THE MEETINGS.

—OF THE—

Medical Convention and Medical Society.

OF THE STATE OF NORTH CAROLINA.

MEDICAL CONVENTION, RALEIGH, APRIL, 1849.

PRESIDENT.	VICE-PRESIDENTS.	SECRETARY.	TREASURER
F. J. Hill.		W. H. McKee.	

FIRST ANNUAL MEETING, RALEIGH, APRIL, 1850.

J. E. Williamson.		W. H. McKee.	W. G. Hill.

SECOND ANNUAL MEETING, RALEIGH, MAY, 1851.

Edmund Strudwick.	C. E. Johnston.	W. H. McKee.	W. G. Hill.

THIRD ANNUAL MEETING, WILMINGTON, MAY, 1852.

J. E. Williamson.	Thos. N. Cameron, Wm. G. Hill, Johnston B. Jones, N. J. Pittman.	E. B. Haywood.	J. J. W. Tucker

FOURTH ANNUAL MEETING, FAYETTEVILLE, MAY, 1853.

J. E. Williamson.	W. G. Hill. Johnston B. Jones, J. G. B. Myers, N. J. Pittman.	W. W. Harris.	Daniel Dupree.

FIFTH ANNUAL MEETING, RALEIGH, MAY, 1854.

J. H. Dickson.	N. J. Pittman, J. G. B. Myers, J. Graham Tull, A. D. McLean.	S. S. Satchwell.	Daniel Dupree.

SIXTH ANNUAL MEETING, SALISBURY, MAY, 1855.

J. H. Dickson.	J. Graham Tull, Owen Hadley, A. D. McLean Hugh Kelly.	S. S. Satchwell.	J. B. Dunn.

SEVENTH ANNUAL MEETING, RALEIGH, MAY, 1856.

C. E. Johnston.	Morcellus Whitehead, E. R. Gibson, Johnston B. Jones, O. F. Manson.	S. S. Satchwell.	J. B. Dunn.

EIGHTH ANNUAL MEETING, EDENTON, APRIL, 1857.

C. E. Johnston.	Marcellus Whitehead. O. F. Manson, H. W. Faison, E. T. Gibson.	W. G. Thomas.	J. B. Dunn.

NINTH ANNUAL MEETING, NEWBERN, MAY, 1858.

W. H. McKee.	Edward Warren, C. W. Graham, Caleb Winslow, A. B. Pierce.	W. G. Thomas.	J. B. Dunn.

TENTH ANNUAL MEETING, STATESVILLE, MAY, 1859.

W. H. McKee.	Jas. G. Ramsay, Peter E. Hines, J. R. Mercer, W. T. Howard.	W. G. Thomas.	C. W. Graham.

ELEVENTH ANNUAL MEETING, WASHINGTON, APRIL, 1860.

N. J. Pittman.	P. T. Henry, R. H. Winborne, M. Whitehead, T. S Leach.	W. G. Thomas.	C. W. Graham.

TWELFTH ANNUAL MEETING, MORGANTON, MAY, 1861.

N. J. Pittman.	J. J. Summerell, C. T. Murphy, G. W. Hodges, W. A. B. Norcum.	W. G. Thomas.	C. W. Graham.

THIRTEENTH ANNUAL MEETING, RALEIGH, JUNE, 1866,

J. J. Summerell.		W. G. Thomas.	C. W. Graham.

FOURTEENTH ANNUAL MEETING, TARBOROUGH, MAY, 1867.

Will Geo. Thomas.	E. Burke Haywood, R. H. Winborne, W. L. Barrow, J. W. Jones.	S. S. Satchwell.	C. W. Graham.

FIFTEENTH ANNUAL MEETING, WARRENTON, MAY, 1868.

S. S. Satchwell.	Hugh Kelly, Geo. A. Foote, Chas. J. O'Hagan, J. H. Baker.	Thos. F. Wood.	J. W. Jones.

SIXTEENTH ANNUAL MEETING, SALISBURY, MAY, 1869.

E. Burke Haywood.	Thos. E. Wilson, A. B. Pierce, C. T. Murphy, M. A. Locke.	Thos F. Wood.	J. W. Jones.

SEVENTEENTH ANNUAL MEETING, WILMINGTON, MAY, 1870.

Chas. J. O'Hagan.	E. A. Anderson, F. N. Luckey, W. R. Sharpe, R. L. Payne.	Thos. F. Wood.	J. W. Jones.

EIGHTEENTH ANNUAL MEETING, RALEIGH, MAY, 1871.

Hugh Kelly.	D. N. Patterson, R. C. Pearson, J. B. Seavy, G. L. Kirkby.	Thos. F. Wood.	J. W. Jones.

NINETEENTH ANNUAL MEETING, NEWBERN, MAY, 1872.

W. G. Hill.	H. W. Faison, R. I. Hicks, G. H. Macon, W. A. B. Norcum.	Jas. McKee.	J. W. Jones.

TWENTIETH ANNUAL MEETING, STATESVILLE, MAY, 1873.

Marcellus Whitehead.	W. T. Ennett, William Little, Chas. Duffy, T. P. German.	Jas. McKee.	H. T. Hahnson.

TWENTY-FIRST ANNUAL MEETING, CHARLOTTE, MAY, 1874.

W. A. B. Norcum.	J. B. Jones, R. F. Lewis, C. G. Cox, J. L. Knight.	Jas. McKee.	H. T. Hahnson.

TWENTY-SECOND ANNUAL MEETING, WILSON, MAY, 1875.

W. J. Jones	Walker Debnam, J. A. Gibson, Wm. Little. D. N. Patterson.	Jas. McKee.	H. T. Bahnson

TWENTY-THIRD ANNUAL MEETING, FAYETTEVILLE, MAY, 1876.

Peter E. Hines.	Jos. H. Baker, G. G. Smith, T. D. Haigh, J. K. Hall.	Jas. McKee.	H. T. Bahnson

TWENTY-FOURTH ANNUAL MEETING, SALEM. MAY, 1877.

Geo. A. Foote.	J. K. Hall, B. W. Robinson, A. A. Holmes, A. A. Hill.	L. J. Picot.	A. G. Carr.

TWFNTY-FIFTH ANNUAL MEETING, GOLDSBORO, MAY, 1878.

R. L. Payne.	E. M. Rountree, Richard Anderson, S. B. Flowers, L. A. Stith.	L. J. Picot.	A. G. Carr.

TWENTY-SIXTH ANNUAL MEETING, GREENSBORO, MAY, 1879.

Chas. Duffy, Jr.	J. A. Gibson, Willis Alston, Jas. McKee. A. A. Hill.	L. J. Picot.	A. G. Carr.

TWENTY-SEVENTH ANNUAL MEETING, WILMINGTON, MAY, 1880.

J. F. Shaffner.	J, K. Hall, W. C. McDuffie, W. R. Wilson, R. F. Lewis.	L. J. Picot.	A. G. Carr.

TWENTY-EIGHTH ANNUAL MEETING, ASHEVILLE, MAY, 1881.

R. B. Haywood.	J. A. McRee, W. H. Lilly, R. H. Speight, W. J. H. Bellamy.	L. J. Picot.	A. G. Carr.

TWENTY-NINTH ANNUAL MEETING, GONCORD, MAY, 1882.

Thos. F. Wood.	T. J. Moore, D. J. Cain, S. E. Evans, John McDonald.	L. J. Picot.	A. G. Carr.

THIRTIETH ANNUAL MEETING, TARBOROUGH, MAY, 1883.

J. K. Hall.	A. W. Knox, J. M. Hadley, E. S. Foster, John Whitehead.	L. J. Picot.	A. G. Carr,

THIRTY-FIRST ANNUAL MEETING, RALEIGH, MAY, 1884.

A. B. Pierce,	F. W. Potter, G. W. Graham, R. Dillard, G. W. Long.	L. J. Picot.	A. G. Carr.

THIRTY-SECOND ANNUAL MEETING, DURHAM, MAY, 1885,

W. C. McDuffie.	Jas McKee, T. E. Anderson, W. H. Whitehead, A. G. Carr.	W. C. Murphy.	R. L. Payne, Jr.

THIRTY-THIRD ANNUAL MEETING. NEWBERN, MAY, 1886.

Jos. Graham.	H. T. Bahnson, L. J. Picot, J. L. McMillan, W. W. Faison.	W. C. Murphy.	R. L. Payne, Jr.

THIRTY-FOURTH ANNUAL MEETING, CHARLOTTE, APRIL, 1887.

H. T. Bahnson.	G. G. Smith, J. L. Nicholson, C. M. Poole, H. B. Furguson.	W. C. Murphy.	R. L. Payne, Jr.

THIRTY-FIFTH ANNUAL MEETING, FAYETTEVILLE, MAY, 1888.

T. D. Haigh.	W. T. Ennett, J. A. Dunn. T. E. Anderson.	J. M. Baker.	C. M. Poole.

THIRTY-SIXTH ANNUAL MEETING, ELIZABETH CITY, APRIL, 1889.

W. T. Ennett.	W. J. Jones, S. W. Stevenson, Geo. W. Long.	J. M. Baker.	C. M. Poole.

THIRTY-SEVENTH ANNUAL MEETING, OXFORD, MAY, 1890.

Geo. G. Thomas.	R. L. Payne, Jr., Richard Dillard, S. D. Booth.	J. M. Hays.	C. M. Poole.

THIRTY-EIGHTH ANNUAL MEETING, ASHEVILLE, MAY, 1891.

R. H. Lewis.	S. W. Battle, J, L. Nicholson, W. H. Lilly.	J. M. Hays.	C. M. Poole.

THIRTY-NINTH ANNUAL MEETING, WILMINGTON, MAY. 1892.

W. T. Cheatham.	T. S. Burbank, J. W. Long, W. H. H. Cobb, W. D. Hilliard.	J. M. Hays.	C. M. Poole.

FORTIETH ANNUAL MEETING, RALEIGH, MAY, 1893.

J. W. McNeill.	W. C. Galloway, H. H. Harris. J. M. Hadley, Thos. Hill.	R. D. Jewett.	M. P. Perry.

FORTY-FIRST ANNUAL MEETING, GREENSBORO, MAY, 1894.

W. H. H. Cobb.	J. A. Hodges, R. W. Tate, Willis Alston, M. H. Fletcher.	R. D. Jewett.	M. P. Perry.

FORTY-SECOND ANNUAL MEETING, GOLDSBORO, MAY, 1895.

J. H. Tucker.	J. H. Way, W. H. Harrell, O. McMullan, C. A. Meisenheimer.	R. D. Jewett.	M. P. Perry.

OFFICERS AND COMMITTEES.

SESSION 1895.

PRESIDENT.

J. H. Tucker, M. D., Henderson.

VICE-PRESIDENTS.

1st. J. H. Way, M. D., Waynesville.
2nd. W. H. Harrell, M. D., Williamston.
3rd. O. McMullan, M. D., Elizabeth City.
4th. C. A. Meisenheimer, M. D. Charlotte.

CORRESPONDING AND RECORDING SECRETARY.

Robert D. Jewett, M. D., Wilmington.

TREASURER.

M. P. Perry, M. D., Macon.

ORATOR.

W. P. Mercer, M. D., Elm City.

ESSAYIST.

R. H. Stansell, M. D., Margaretteville.

BOARD OF CENSORS.
[Expires 1895.]

W. C. McDuffie, M. D., Fayetteville.
Thos. E. Anderson, M. D., Statesville.
H. H. Harris, M. D., Wake Forest.

PUBLICATION.

Geo. G. Thomas, M. D., Wilmington.
Thos. S. Burbank, M. D., Wilmington.
W. J. Love, M. D., Wilmington.
Robt. D. Jewett, M. D., Wilmington.

NECROLOGY.

R. L. Payne, M. D., Lexington.
R. H. Lewis, M. D., Raleigh.
Thos. M. Riddick, M. D., Woodville.

CREDENTIALS.

W. H. H. Cobb, M. D., Goldsboro.
R. H. Whitehead. M. D., Chapel Hill.
A. Anderson, M. D., Wilson.

FINANCE.

W. J. Jones, M. D., Goldsboro.
R. J. Noble, M. D., Smithfied.
W. C. Galloway, M. D.. Wilmington.

MINUTES

—OF THE—

FORTY-SECOND ANNUAL MEETING

—OF THE—

Medical Society of the State of North Carolina.

FIRST DAY—MORNING SESSION.

GOLDSBORO, N. C., Tuesday, May 14, 1895.

The Forty-Second Annual Meeting of the Medical Society of the State of North Carolina was convened in the City of Goldsboro on the 14th day of May, 1895, in the Opera House.

The Society was called to order at 10 o'clock by Dr. W. H. H. Cobb, chairman Local Committee of Arrangements, Dr. John H. Tucker, of Henderson, the President, occupying the Chair, and Dr. Robert D. Jewett, of Wilmington, being Secretary.

Prayer was offered by the Rev. Mr. McQueen.

The Mayor of Goldsboro welcomed the Society in a brief, but most cordial speech.

Dr. W. J. Jones delivered the following

ADDRESS OF WELCOME.

Mr. President and Gentlemen of the Medical Society of North Carolina:

The presence of your learned and distinguished body in our city emphasizes an event of which we feel proud, and to which in after years memory will revert with pleasurable reminiscence. In your annual pilgrimage, after the cycle of many years, you once again appear at our gates, and in behalf of the local fraternity our excellent Lord Mayor and Board of City Councilmen, with warm hearts and ready hands we extend a hearty greeting and cordial welcome to the hospitalities and privileges of your chosen Mecca, which we trust to make enjoyable during your temporary stay in our midst.

Coming, as you do, from the various sections of our grand old Commonwealth—some from her rock-ribbed mountains, upon whose majestic peaks are daily coronations by mingled cloud and corruscating sun-rays—others from near the blue waters of the Atlantic, whose rippling billows awake with their splashing laughter the sunbeams of morning—and others again from our own beloved plains. And while unable to excite your admiration and awe with enchanting scenery of picturesqueness and grandeur afforded by mountain and sea, still they come with radiant smiles and joyous hearts born of the inspiration of nature around them; and would point you to the Goddess of Plenty, whose cornucopia is ever replenished by this propitious climate and prolific soil; also, as typical of their aspirations, they have in their forests

the tall and majestic pine, that sways its lofty head when fretted by the gusts of heaven and bids defiance to the storm-clouds, and yet bows complacently at the rage of an impotent foe—even political—as in Goldsboro and the county of Wayne. Yes, gentlemen, during your short respite from laborious professional work, we trust that while in our city your enjoyment will be commensurate with our esteem and appreciation of your distinguished body.

Mr. President, the scientific guild over which you have the exalted honor to preside on this occasion (it being your forty-second annual session) is comparatively but a small contingent of the grand army of co-laborers in the ever progressive and widening domain of medical science. With the population of seventy millions in the United States of America we have one hundred and five thousand, one hundred and eighty-three practicing physicians, and we hope, sir, that the physicians and surgeons of your learned body will not in the future, as in the past, be content, with their God-given talents, to merely swell the overflowing mediocrity of their profession, but achieve and maintain the highest standard of professional excellence. By earnest and persistent determination to surmount all obstacles, ever keeping your eyes toward the summit of professional eminence, where, inscribed in living light, are the immortal names of the illustrious members of your profession, you may in this way hope to reach the goal or upper rungs in the ladder by which alone you may expect to enter the Temple of Fame, possessing wealth and happiness, and in the "yielding stone of time" have your fondest dreams engraved.

Within the last two decades the advancement in the science and art of your ennobling profession has been marvellous indeed, and should cause us most reverently to proclaim our gratitude to a merciful God for the discovery and utilization of inexhaustible resources which are of incalculable benefit to suffering humanity.

While it is true that your progress has been phenominal, and that clinical demonstration of advanced methods in surgery and rational medicine has enabled you to hold in leash the terrible scourges that ever and anon are wont to invade and decimate the bright and beautiful habitations of man, yet you must confess not infrequently your utter inability to successfully resist or capture the invading foe, "and with sad entreaty invoke the mystic elixir vitæ" of a Paracellus or the heavenly electrified Pool of Bethesda, by the touch of whose agitated waters the demon of disease is instantly expelled.

Mr. President, the grave responsibility resting upon our profession makes it no sinecure; its labors are various and constant, its toils unremitting, its cares unceasing.

The physician is expected to meet the grim monster, "break the jaws of death and pluck the spoil out of his teeth." His ear is ever attentive to entreaty, and within his bosom are concealed, sacred and inviolable, the disclosures of the suffering and dying. Success may elate him, as conquest flushes the victor.

Honors are lavished upon the brave soldiers who, in the struggle with the foe, have covered themselves with glory and returned victorious from the field of battle, but how much more brilliant is the achievement of those who overwhelm disease, the common enemy of mankind, whose victims are numbered by the millions. Another paramount duty of the physician as a public benefactor I will suggest by submitting the postulate that if the stability and maintainance of good and permanent government depends upon the virtue and intelligence of its people, it is imperatively necessary to foster and secure the health, strength and physical development of succeeding generations of a

stalwart and vigorous yeomanry, who cannot only defend and perpetuate government, but become fathers and mothers of statesmen, philosophers and warriors—men who can say ambition has no height where genius and talent may tread that has not felt the impress of their feet.

And now, in conclusion, Mr. President, we would repeat our welcome to your distinguished fraternity of scientific workers, hoping that your session in Goldsboro shall have accomplished much for your organization, much for the profession of medicine, much for suffering humanity, much for the world, much for yourselves. May Heaven's choicest blessings be in store for you! May you live to enjoy long, useful and happy lives! May the hand of Fate bestow on you fame, wealth and happiness; and, finally, sir, may the North Carolina State Medical Society live in the love of science and fellowship until that God whose means and ends are love shall decree that they shall end on earth, but still may love and fellowship guide you through the pearly gates into the eternal city.

On behalf of the Society Dr. C. J. O'Hagan, of Greenville, made the following

RESPONSE.

Mr. Mayor, Ladies and Gentlemen:

My friend, Dr. Cobb, has given me such a wonderful send-off here I'm afraid that you will expect far more than I am able to give you; and after the eloquent and warm address of welcome we have received I find I have no language sufficient to express the feelings that animate this body.

I'm a plain, blunt man, not gifted with a set phrase of speech, one whose days and nights are occupied with sick beds in work, and I regret at this time that I am not gifted with the necessary powers of speech to express in sufficient terms the feelings and gratitude that we feel toward the Goldsboro people to-day, not that it is strange to me, for I knew it before—I knew it when it was a way station, and should I have not seen it from that time until the present, I would have been astonished at the wonderful growth; at your wide and spacious streets, showing that the sanitation of the place is attended to; at the wonderful industrial works; and, above all, the enlightened system of education which you have provided for the youth. All these testify to the energy of the public spirit and the munificence and magnificence of the people of Goldsboro. And among all the triumphs, industrial and other, none can possibly compare with the educational institution which you have here in your midst—the Goldsboro Graded School. All other achievements, in my judgment, sink into insignificance compared to that. As the English poet Gray, in his Elegy upon the Church-yard, speaks of "full many a flower born to blush unseen," so many a flower which would have withered under the blighting hand of penury, will arise and, in years to come, will shed glory not only upon the town which has bestowed these educational advantages, but upon the whole country to which we belong.

But while thinking of these triumphs I cannot but refer back to the past and wish that I could see here, among the many faces which surround me, the many friends who have gone before. I think, also, of the many gallant soldiers who have gone from this town, of the brave Goldsboro Rifles, who among thousands of others, gained and held the fame and glory of North Carolina bravery. And can I forget that gallant band of cavalry, that first cavalry to which I had the honor to belong, and the gallant Tom Ruffin, the purest and best and noblest man of the many with whom I have been ac-

quainted? There is a beautiful custom in the French service: After the days of the first revolution of France, when the Grenadier Guards came to the front for review, they called out the name of the best and oldest Grenadier, and his name was Lateur De Verne. Some one stepped forward, and, with a shout, proclaimed, "Dead upon the field of battle;" and when the name of Thomas Ruffin is called the answer comes, "Dead upon the field of battle," a cavalier without fear and without reproach, an honor to any service and a leader of men, one of whom the Roman legionaries and the guard of the great Emperor himself were not superior.

And now, ladies and gentlemen, at the risk of being tedious, I will bring my few scattered remarks to a close, and in the name of the Medical Society of North Carolina thank you, again and again, for your generous and hospitable welcome.

The Committee of Arrangements announced that an entertainment would be given to the Society in the Opera House that evening.

The Society was now called to order by the President for the transaction of business.

The plan followed at the meeting in Greensboro of allowing 20 minutes for the reading of a paper and 5 minutes to any member in the discussion was adopted for this session.

The following Committee on Credentials was appointed: Drs. W. H. H. Cobb, R. H. Whitehead and Albert Anderson.

Drs. W. J. Jones, R. J. Noble and W. C. Galloway were appointed the Committee on Finance:

The roll was called by the Secretary.

The President's Address was now read before the Society and a number of the citizens of Goldsboro.

On motion, the thanks of the Society were extended the President for his profitable and interesting Address, and it was referred for publication.

The members of the Society were invited to visit the Eastern Hospital by the Superintendent, Dr. Miller.

The Society adjourned till 3 o'clock.

FIRST DAY—AFTERNOON SESSION.

Society called to order by the President at 3 o'clock.

The Committee on Credentials introduced Messrs. John H. Hill, H. C. Shannon and C. B. Miller as Deleates from the North Carolina Pharmaceutical Association, who were welcomed by the President.

Dr Albert Anderson read a paper on "Diphtheria Antitoxine," which was referred to Committee on Publication.

The Committee on Credentials made a partial report. (All reports from this Committee will be embraced in one which appears in proceedings of last day.)

Dr. P. L. Murphy, of Morganton, next read a paper entitled "Care of the

Insane and Treatment and Prognosis of Insanity." Referred to Committee on Publication.

Dr. Hays read a memorial sketch of the late Dr. R. L. Payne, prepared for the Guilford County Medical Society. It was referred to the Obituary Committee.

Upon motion, Dr. Julian, Secretary of the Davidson County Medical Society, of which Dr. Payne had been a member, was requested to read a memorial of Dr. Payne. The paper was referred to the Obituary Committee, and ordered by that Committee to be incorporated in their report.

Dr. Bahnson presented a paper by Dr. A. R. Wilson, Chairman of Section on Physiology and Materia Medica, which was read by title and referred to the Committee on Publication.

Dr. J. G. Blount, of Washington, read a paper on "Anæsthesia," which was referred to the Committee on Publication.

Dr. A. W. Knox, Chairman of Committee on Legislation, made his report. (See Appendix.)

Upon motion, the report was accepted and a vote of thanks was extended to the Committee on Legislation, to Dr. Lewis and to all others who had looked after the interest of the Society and of the people of North Carolina by preventing the enactment of unwise laws.

Dr. R. H. Whitehead, of Chapel Hill, read a paper entitled "A Case of Multiple Perforation of the Small Intestines," which was referred to the Committe on Publication.

Dr. H. A. Royster, of Raleigh, gave an instructive and interesting practical "Demonstration of a New Method in Applying Plaster-of-Paris Dressing in Fractures."

The Society was very much gratified with the demonstration by Dr. Royster, and referred the paper to Committee on Publication.

Dr. S. J. Montague, of Winston, read a paper entitled "A Report of a Case of Chronic Purulent Otitis Media." Discussed by Dr. R. H. Lewis and referred to the Committee on Publication.

The following Committee on the President's Address was announced: Drs. J. W. McNeill, W. H. Harrell and J. L. Nicholson.

An invitation from the Y. M. C. A., extending the use of their Halls to the Society, was read and the thanks of the Society returned.

Society adjourned till 9: 30 a. m. Wednesday.

SECOND DAY—MORNING SESSION.

The Society was called to order by the President at 9: 30 o'clock.

The following Committee on Nominations was appointed: Drs. R. S. Young, P. L. Murphy, W. H. Cobb, Jr., F. R. Harris and J. B. H. Knight.

Committee on the Duffy Prize Essay made the following report, which was adopted:

Your Committee on Award of the Duffy Prize beg leave to report that two papers were submitted in competition for the prize; that we have given a careful examination to both papers, both separately at our respective homes, and conjointly as a committee after reaching Goldsboro, and that we have reached the following conclusions:

1. Neither essay gives the botanical descriptions with sufficient accuracy to lead to the identification of the remedies named.

2. Neither paper gives the physiological actions and therapeutic indications for the proposed remedies with sufficient detail.

Therefore, while both essays are creditable, your Committee does not think that either attains that high order of merit which your Society demands and which would entitle it to the award of a prize.

We desire to say, also, that we have not opened the sealed envelopes which contain the real names of the respective writers of the papers, and that, therefore, their incognito is preserved.

We have delivered the papers to the Secretary of the Society, and their owners can secure them from him, if they so desire.

Respectfully submitted,

R. L. PAYNE,
A. W. KNOX, } Committee.
A. CHEATHAM.

Dr. A. A. Kent, Leader of Annual Discussion, opened the discussion by reading a paper on "The Abuse of Alcoholic Stimulants in Practice."

Dr. Picôt asked the pleasure of introducing to the Society the distinguished Professor of Surgery in the Jefferson Medical College of Philadelphia, Dr. W. W. Keen, who was invited to the courtesies of the floor.

Dr. R. H. Whitehead read a paper entitled, "The Anatomy of Hernia with Reference fo Vacewan's Operation," which was referred.

Dr. C. O'H. Laughlinghouse read his report as Chairman of the Section on Anatomy and Surgery, entitled "Something of Surgery up to Date."

Discussed by Drs. W. W. Keen and H. T. Dahnson and referred to the Committee on Publication.

Dr. W. J. Jones offered the following report of the Finance Committee:

To the Medical Society of the State of North Carolina:

Your Committee on Finance having examined the books and accounts of the Treasurer, beg leave to make the following report:

Balance on hand, May 15th, 1895.	$1,307 41
Amount paid out on vouchers to date	692 40
Balance on hand, ...	$ 615 01

The committee recommend the usual assessment of $2.00 per capita for the

ensuing year, and that the salaries of the Secretary and Treasurer be the same as for last year.

Respectfully submitted, W. J. JONES,
R. J. NOBLE,
W. C. GALLOWAY.

Dr. J. W. Long read a paper on "Surgical Technique," illustrating his paper with photographs and specimens of dressings, etc. Referred to the Committee on Publication.

Dr. R. H. Lewis stated that the law required the Society to furnish books for the registration of physicians by the county clerks, and that the first supply was exhausted. He moved that a committee be appointed to have a lithograph plate made for printing these forms and that a sufficient number of books be printed.

Motion prevailed, and the Chair appointed as the Committee Drs. R. H. Lewis, R. D. Jewett and A. W. Knox.

Dr. Lewis announced that the name of Dr. Thomas Fanning Wood had been placed upon the portrait presented by the Society to the State Library and the portrait placed in position. The report was received and the committee discharged.

Dr. R. L. Grainger, a member of the New York Medical Society, was introduced by Dr. Bahnson and extended the courtesies of the floor.

The commitee appointed to consider the wisdom of establishing the office of Librarian made the following report, which was adopted:

Your committee to whom was referred, at the Greensboro meeting of the Society, the matter of the disposition of the "books, exchanges and other valuable periodicals of the Society," do respectfully recommend that the Secretary of the Society be, and he is hereby, instructed to deposit the same in the library of the State University at Chapel Hill, where they may be consulted by the pupils of the Institution, members of this Society and other members of the profession, when desired, under the rules and regulations governing the use of other books in the library of said University; *provided* that the said books be accepted by the University as a loan.

Respectfully submitted,
J. HOWELL WAY,
H. T. BAHNSON,
T. S. McMULLAN.

Adjourned to meet at 3 o'clock.

SECOND DAY—AFTERNOON SESSION.

Session called to order at 3 o'clock by the President.

Dr. D. T. Tayloe read a report of surgical cases as follows: "Interstitial Fibroid—Removal by Supra-pubic Hysterectomy"; "Removal of Uterine Appendages for Disease"; "Osteotomy for Angular Deformity After Fracture of Tibia and Fibula."

Referred to the Committee on Publication.

ELECTION OF OFFICERS.

The hour having arrived for the election of officers for the ensuing year the President called for nominations for President.

In a neat and complimentary speech, Dr. W. H. H. Cobb nominated Dr. R. L. Payne, of Lexington.

There were no other nominations, and, on motion, the Secretary was instructed to cast the vote of the Society for Dr. Payne, whereupon he was declared duly elected President of the Society for the ensuing year.

The following Vice-Presidents were nominated and unanimously elected:

1st Vice-President—Dr. S. D. Booth, Oxford.
2d " " —Dr. J. P. Munroe, Davidson.
3d " " —Dr. J. A. Burroughs, Asheville.
4th " " —Dr. J. E. Grimsley, Snow Hill.

Nominations for Secretary being in order, Dr. Robert D. Jewett was placed in Nomination, and there being no further nominations, the Treasurer was requested to cast the vote of the Society for him, and he was declared elected

Dr. M P. Perry was placed in nomination for re-election to the office of Treasurer, and, on motion, the Secretary was requested to cast the vote of the Society for him, and he was declared unanimously elected.

Dr. J. A. Burroughs read his report as Chairman of Section on Medical Jurisprudence and State Medicine, being entitled "Needed Legislation and a Practical Enforcement of Existing Laws." Referred to the Committee on Publication.

The Committee on President's Address offered the following report, which was received and adopted:

The committee appointed to consider the recommendations in the President's Address, respectfully report as follows:

1st. That his urgent appeal in behalf of the protectives of public health from small-pox and other preventive diseases is timely and deserves the most serious consideration from the Society. While we recognize the valuable efforts on this line by our State Board of Health, the magnitude of this question is so great and of such vital importance to the people of our State, we urge the Society, as a body, and its members as individuals, to aid in every way the carrying into effect the President's recommendations.

2d. That we advise the adoption of the recommendation, "That more time be allotted to the two Sections on the 'Practice of Medicine' and 'Surgery.'"

3d. We recommend that the suggestion in reference to the selection of the Committee on Legislation be adopted.

4th. In view of the fact that a committee was appointed at the last meeting of this Society to consider the establishment of the office of Permanent Secretary and Librarian, this committee, while heartily endorsing our President's suggestions, will make no recommendation in regard to this matter.

J. W. McNEILL,
W. H. HARRELL,
J. L. NICHOLSON.

Dr. A. H. Harris made his report as Chairman of the Section on Gynæcology, the paper being referred to the Committee on Publication.

Dr. Bahnson said that it has always been the policy of the Society to restrict to the utmost limit the list of honorary members. At present there are only two on the list who have not been active members of the Medical Society of North Carolina for a period of years. The Society had always tried successfully to add no one to that list who did not confer upon it an honor equal to that the Society endeavored to confer upon him. Fully recognizing that fact, he desired to move that the names of Dr. W. W. Keen, of Philadelphia, and Dr. L. McLane Tiffany, to Baltimore, be added to the list of honorary members of the North Carolina Medical Society. Adopted.

Dr. Joshua Tayloe, of Washington, Chairman of Section on Obstetrics, presented a paper on "Abortion and Its Management."

Dr. T. S. McMullan, of Hertford, read a paper entitled "The Rational Treatment of Puerperal Eclampsia."

Dr. Haigh moved that the paper be referred to the Committee on Publication, with the request that it be published. He considered it an unusually fine paper, every part of it tallying with the other—everything unnecessary seems to have been left out. It seemed to be a paper that will do good.

On account of the absence of Dr. John R. Irwin, of Charlotte, his paper on "An Obstetric Resource and Necessity" was read by title and referred to the Committee on Publication.

Dr. Francis Duffy, of Newbern, read a report of "Cases of Hypertrophic Nasal Catarrh, Treated by Electrolysis"; "Case of Malignant Tumor of Knee-Joint"; "A Case of Complex Error of Refraction of Eyes"; which were referred to the Committee on Publication.

Dr. W. H. Wakefield, of Charlotte, read a paper entitled "Corneal Ulcers."

Dr. J. C. Walton offered the following resolutions:

Resolved, That the licentiates of the Board of Medical Examiners, at its present session, be added to the list of members of this Society upon notification to the Secretary by the Treasurer of the payment of their initiation fees.

Resolved, That any physician in the State in good standing and legally qualified to practise medicine may be similarly admitted upon recommendation of two members in good standing in this Society.

This motion would involve an amendment of the Constitution and therefore discussion and action were postponed until next year.

Dr. F. H. Russell, of Wilmington, read a paper entitled "Puerperal Septic Infection—Its Prophylaxis and Treatment of Infection Through the Uterus."

On motion, the order of business was suspended and the Society went into the selection of a place of meeting for the next year.

An invitation from the Edgecombe County Medical Society to the State Society, to meet in Tarboro, was read by the Secretary.

It was moved that the next meeting be held in Winston-Salem.

A standing vote was taken, Winston-Salem receiving 29 and Tarboro 17. Winston-Salem was therefore declared to be the place of meeting of the Society in 1896.

The Society adjourned to meet at 8:30 p. m.

SECOND DAY—EVENING SESSION.

The Society was called to order at 8:30 p. m.

In a few appropriate words the President introduced the Annual Essayist, Dr. R. H. Stancell, Jr., of Margarettsville, who read his essay, entitled "Empiricism," before the citizens of Goldsboro.

The Orator of the occasion Dr. W. P. Mercer, of Elm City, was also introduced by the President, and delivered the Annual Oration, his subject being "The Cradle."

Dr. Thomas Hill, of Goldsboro, read, by request of the Society at its last meeting, a paper on "Native Materia Medica," which was instructively illustrated by stereopticon

The Society then adjourned till to-morrow morning at 9:30 a m.

THIRD DAY—MORNING SESSION.

The Society was called to order at 9:30 by the President.

On motion, the Society returned a vote of thanks to Drs. Stancell and Mercer for the essay and address.

Dr. W. S. Anderson, of Wilson, read a paper entitled "Uncontrollable Vomiting of Pregnancy." Referred.

Dr. Thomas Marshall was introduced to the Society.

Dr. Thomas Riddick, of Woodville, as Chairman of the Section on Therapeutics and Practice of Medicine, read his report, entitled "Pneumonitis in Childhood."

The Nominating Committee offered the following as their report, which was adopted:

Committee on Legislation.—A. W. Knox, K. P. Battle, Jr., J. L. Nicholson, W. H. H. Cobb.

Committee on Publication.—R. D. Jewett, W. C. Galloway, D. W. Bulluck, A. H. Harris, G. G. Thomas.

Board of Censors.—W. O. McDowell, H. H. Harris, Thomas E. Anderson.

Annual Orator—H. H. Dodson.

Annual Essayist—W. P. Ivey.

Leader of Debate—H. A. Royster.

Obituary Committee.—W. J. Jones, R. D. Jewett, J. C. Montgomery.

Delegates to the American Medical Association.—R. H. Stancell, Jr., D. T. Tayloe, Oscar McMullan, H. B. Weaver, J. A. Burroughs, J. M. Faison, P. E. Hines, G. M. Bell, D. G. Caldwell, A. Cheatham.

Delegates to the Southern Surgical and Gynæcological Association.—J. S. Lafferty, W. H. Bobbitt, R. A. Whittaker, D. A. Stanton, C. A. Julian, L. W. Hunter.

Delegates to the Virginia Medical Society.—W. H. Harrell, R. H. Whitehead, J. C. Walton, S. L. Montgomery, B. L. Long, N. H. Street.

Delegates to the South Carolina Medical Association.—J. C. Montgomery, T. F. Meisenheimer, J. C. Black, L. L. Sasser, A. J. Battle, John C. Blount.

Delegates to the American Public Health Association.—Albert Anderson, W. T. Pate, W. H. Lilly, A. J. Crowell.

Delegates to the North Carolina Pharmaceutical Association.—W. C. Steele, G. W. Lewis, C. M. Benton, W. C. Sanford.

Delegates to the American Pharmaceutical Association.—J. W. McGee, Jr., J. H. Marsh, Paul A. Barrier, W. D. Pemberton.

Dr. Thomas R. Marshall read a paper entitled "Scarlet Fever." Referred.

Dr. R. J. Grimes read a paper on "Dietetic Regimen in the Treatment of Disease," which was referred to the Committee on Publication.

Dr. A. B. Pierce, having to leave for home, read a paper on Phthisis Pulmonalis by title, and it was referred to the Committee on Publication.

Dr. W. E. Fitch, of Durham, read a paper entitled "Cholera Infantum." Referred.

The Obituary Committee made its report, which was referred to the Committee on Publication.

On motion, the regular order of business was suspended and the Society proceeded to the installation of officers.

Dr. Haigh and Dr. Hines were appointed to escort the incoming President to the Chair.

The retiring President thanked the Society for the honor shown him in placing him in the position of President, which is the highest honor that the Society can bestow upon a member, and handed the gavel to his successor, congratulating the Society upon the wisdom of its choice.

Dr. Payne, in accepting the insignia of office, expressed the wish that he might perform the duties involved upon him as faithfully and as creditably

as Dr. Tucker had done, and, though he accepted the position with a profound sense of unfitness, yet he desired to serve the Society as best he might.

Dr. F. Homer Arthur, of Harrell's Store, read a paper entitled "Whooping Cough." Referred.

Dr. S. J. Montague, of Winston, read a paper entitled "Therapeutic Use of Tobacco in Parasthesia, with Report of a Case of Pruritus Hiemalis."

Dr. P. B. Loftin, of Grifton, read a paper entitled "Hemorrhagic Fever."

A paper, entitled "Remarks on the Treatment of Typhoid Fever," by Dr. E. F. Strickland, of Bethania, was read and referred to the Committee on Publication.

Dr. Montague moved that thanks be tendered to the people of Goldsboro or their kind reception and entertainment of the members of the Society. Carried.

Dr. R. A. Patterson read a paper entitled "Treatment of Diphtheria," which was referred.

Dr. Grimsley made a verbal report of the following case: The patient came to his office some time in June, 1892, stating that he had diarrhœa of two months standing, accompanied by pain in the lower bowel, and Dr. Grimsley diagnosed chronic diarrhœa and prescribed pepsin and bismuth, and as an injection carbolic acid. That relieved for a while, but in about two months he came back and stated that it had returned accompanied by severe pain in the bowels. The same prescription was given again, with a solution of nitrate of silver, ten grains to the pint, and he was told to take it once a week. He went on with that treatment from time to time, with only temporary relief, until the latter part of June, 1894. He was then taken with what seemed to be an acute attack of dysentery, severe pain and straining and discharge of blood and mucus. The prescription that time was three compound cathartic pills, and through the night they acted very freely and he passed this stone (which was exhibited). The evening before passing the stone he said he could detect something hard that would not come away. Since that time he has had no diarrhœa and has been well. The weight of the stone is seven drachms. There was no history of any hepatic colic. The man had always been a hard drinker all his life.

On motion, it was decided to hold the next meeting of the Society on the second Tuesday in May, 1896.

The President announced the following appointments of chairmen of sections and committees:

Section on Pathology and Microscopy.—Dr. D. M. Prince, Laurinburg

Section on Practice of Medicine.—Dr. I. W. Faison, Charlotte.

Section on Anatomy and Surgery.—Dr. J. L. Nicholson, Richlands.

Section on Materia Medica and Therapeutics.—Dr. John C Montgomery, Charlotte.

Section on Medical Jurisprudence and State Medicine.—Dr. J. C. Walton, Reidsville.

Section on Obstetrics.—Dr. C. A. Julian, Thomasville.

Section on Gynecology.—Dr. John Blount, Washington, N. C.

Section on Chemistry and Physiology.—Dr. W. H. H. Cobb, Goldsboro.

Committee on Duffy Prize.—Dr. R. S. Young, Concord; Dr. I. M. Flippen, Thomasville; Dr. S. W. Stevenson, Mooresville.

Committee on North Carolina Medical Journal Prize.—Dr. Geo. G. Thomas, Wilmington; Dr. J. W. McNeill, Fayetteville; Dr. W. B. Crawford, Goldsboro.

It was suggested that the subjects for these prizes should be published with the Transactions.

The following is a list of names reported favorably by the Committee on Credentials:

Drs. George H. West, R. S. McGeachey, J. S. Brown, W. D. Bowen, F. H. Russell, J. C. Montgomery, W. E. Murphy, C. E. Moore, W. L. Kirkpatrick, H. A. Royster, F. W. Whitehead, W. T. Turlington, R. D. Ross, W. O. Baskerville, J. W. Saine, Joseph Dixon, B. W. Best, John Thames, John T. Strickland, J. C. Rodman, C. M. Jones, John B. Carr. For reinstatement, Drs. W. H. Cobb, Jr., and F. H. Arthur.

The following resolution was unanimously adopted:

Resolved, That the Medical Society of North Carolina tender thanks to the physicians and citizens of Goldsboro for the kind and Hospitable manner in which we have been entertained while with them, and especially would we express our appreciation of the entertainment by the Graded School teachers and the ladies for their very pleasant social courtesies.

On motion, the Society adjourned, to meet in Winston-Salem on the second Tuesday in May, 1896.

J. H. TUCKER, M.D., President.

R. D. JEWETT, M.D., Secretary.

BOARD OF MEDICAL EXAMINERS OF NORTH CAROLINA.

Regular Meeting, held in Goldsboro, May 13th, *et seq.*, 1895.

The Board of Medical Examiners of the State of North Carolina met at Goldsboro Monday, May 13th, at 9 o'clock, a. m. There were present Drs. W. H. Whitehead, President, L. J. Picôt, Secretary, J. M. Hays, J. M. Baker, George W. Long, H. B. Weaver. Dr. Thos. S. Burbank reported for duty during the session.

There were 64 applicants and of these 53 were licensed and 11 refused.

Dr. Lee Cohen, of Newbern, N. C., won the Appleton prize on a grade of 97.$\frac{4}{7}$, and Dr. Chas. L. Minor, of Asheville, N. C., stood the next highest examination, his grade being 97.$\frac{3}{7}$. This will probably entitle him to a second

prize from Messrs. G. H. Harvey & Co., Saratoga Springs, N. Y. It was a noteworthy fact that the general character of the examinations was higher than ever before in the history of the Board, and a larger per cent. of applicants licensed during the past five years. The same grade of 80 per cent. was required as in former years.

An extra session of the Board will be held this summer at Asheville, N. C., due notice of which will be given in this JOURNAL.

The following is a list of licentiates: Drs. Thos. C. Gibson, Winton, Goode Cheatham, Henderson, F. L. Potts, Washington, Earl Grady, Tryon City, S. M. Crowell, Mint Hill, James L. Bullock, Greensboro, J. H. Fouts, Franklin, C. E. McCoy, Franklin, O. H. Kenan, Kenansville, A. G. Thompson, Waderville, J. H. Alston, Townesville, E. H. Brooks, Monroeton, Jasper N. Anderson, Albemarle, T. C. Walker, Randlemann, M. Olivia Ne Lon, Asheville, T. V. Goode, Cherryville, C. L. Minor, Asheville, F. D. Crim, Hot Springs, N. A. Thompson, Lumberton, W. W. Whittington, Asheville, M. P. Blair, Clover, S. C., W. H. Crowell, Poortith, R. S. Turlington, Bennettsville, S. C., C. V. Reynolds, Asheville, N. M. Gibbs, Fairfield, G. W. Presley, Charlotte, G. A. Hood, Newton Grove, T. C. Hamrick, Henrietta, J. V. Williams, Evalin, E. R. Russell, Rockingham, E. M. Brevard, Charlotte, B. F. Halsey, Roper City, N. C. Daniel, Satterwhaite, J. L. Spruill, Columbia, A. J. Eller, Reedy Branch, Stanford L. Warren (col.), Durham, L. G. Frazier, Oxford, J. C. Hammack, Walkertown, LEE COHEN, Newbern, W. S. Hay, McAvensville, M. D. Bowen (col.), Clarkton, E. L. Stamey, Morehead City, Edwin Klebs, Asheville, James M. Parrott, Kinston, W. G. Shaw, Font Col, R. P. Morehead, Lasker, F. L. Siler, Dillsboro, W. S. Jones, Goldsboro, F. H. Homes, Clinton, J. W. Rodwell, Macon, J. R. Reitzel, Pineville, E. T. Dickenson, Fremont, H. T. Aydlett, Elizabeth City,

W. H. WHITEHEAD, M.D., President.

L. J. PICOT, M.D., Secretary.

NORTH CAROLINA BOARD OF HEALTH.

Conjoint Session with the North Carolina Medical Society May 15th, 1895, at Goldsboro, N. C.

The Conjoint Session was called to order at 12 o'clock by the President, Dr. Geo. G. Thomas, of Wilmington.

The President stated that the expiration of the terms of Dr. W. H. Harrell, of Williamston, and Dr. John Whitehead, of Salisbury, made it necessary to go into an election for members to fill their places.

Dr. W. H. Harrell, of Williamston, and Dr. John Whitehead, of Salisbury, were unanimously elected to succeed themselves in office.

Dr. R. H. Lewis, the Secretary, read his report. (See Appendix.)

Dr. Haigh said that in his section of country there had been a great deal of interest taken in sanitation, and especially in regard to the supply of water. Of late years the malarial cases had assumed a more serious form, that of hemorrhagic fever. The simple driven pump is not having the full effect expected, that is, not giving freedom from surface water. He wished all the information he could get upon the subject. He had never seen the people take more interest in matters coming from the State Board of Health. He was sure that the profession would help the Board in every way in distributing these tracts.

Dr. Booth was glad that the Board was holding meetings round through the State, and he thought that the Board was doing a great work.

The report of the Secretary was received.

Dr. Geo. H. West presented, through the Secretary, a paper on the "Influence of Water on Malarial Fever." It was read by title and referred.

The Secretary stated that Dr. West reported his experience as a physician to the convict camps on the Roanoke river. He had found a marked difference in the amount of malaria caused from the driven pump and the open well. The desire is to get through the impervious layer of marl and clay; but he had found the malaria very much diminished about 25 or 30 feet deep, but not through the marl or clay. He reported a letter he had gotten from Dr. Whitaker, the County Superintendent of Jones county, of Trenton. Dr. Whitaker said in his letter that Trenton was situated on a ridge, with the river one one side and a mill-pond on the other. The people on the ridge rarely ever suffered from malarial troubles, but there was one well on the slope—the people who drank from it suffered very much from malarial diseases. The dam of the pond broke in the spring and was not repaired until the following fall, and the bottom of that pond lay exposed to the suns of summer on the South side of the town during the entire season, and there was no increase whatever in the amount of malaria in the town. Dr. Whit-

aker himself and others fished in the little pools without the slightest hesitation and never had any malarial fever. He said that afterwards something got the matter with the mill and the owner turned off the water in order to repair his mill, and the consequence was deep indignation on the part of the people of Trenton; but, instead of an increase in the amount of malaria during that August and September, if there was any difference at all, there was less than there was before.

The President reported a series of cases from Jacksonville, N. C., bearing upon this question. The town is practically enclosed by New River; it is in Onslow county. On the point of this peninsula is situated a large saw-milling plant. These patients (all young men), having been warned of the dangers, had used Apollinaris and other bottled spring waters. All of the water was absolutely protected, but they had frequent and severe attacks of malaria. He suggested to these young men that, in addition to the care they exercised, they insist upon their cook boiling every day the water used in cooking their food that came from a well outside 140 feet deep. It went down through the mud layer and the layer of sand and layer of clay. So far the experiment of boiling the water has done very well. One of the young gentlemen has had an occasional outbreak of malaria. There has been no sign of an outbreak since the boiling began.

Dr. O. McMullan said that he had read Dr. Lewis' pamphlet. His experience ran back some twelve years or more in the eastern part of the country, and it went to show that malarial troubles were greatly diminished in 1884 and 1885, when there were very little. Frequently through whole years only four or five cases are heard of. The people all improved when the open wells and springs were first substituted by driven pumps; but the chills are all coming back again. In the year 1893 there was a decided change, and in the spring the people all over the country began to have chills. He thought that there must be some fallacy in the theory that the water was the cause of the chills and fever.

Dr. Sikes wished to corroborate what had just been said. In the year 1882 nearly everybody in the hill country had chills. Then they had no more chills, except a few up and down the border of a swamp, until 1894. They did not have any pumps nor make any change, drinking the same water and exposed to the same causes all the time. Chills come in his country by epidemics.

Dr. Duffy did not wish to detract anything from the importance of a good supply of drinking water, but he did wish to say something in favor of bad air as a possible cause. He related the history of a set of cases that fell under his observation last year. At a place five miles from Newbern, known as Fay's Mill, the pond had become dry and had been so for several years. A stream of water ran through the bed. A family lived there on the verge of that mill-pond and drank from a spring that ran from a rock. That was

the only water they used, and the most malignant case of malarial fever that he saw during that year was in that family. One patient was totally unconscious from having convulsions. Fortunately, he had a supply of Sharp & Dohme's bimuriate of quinine for hypodermic injection, and he recovered. There were a number of cases in that family. While he did not think that the importance of good wells could be exaggerated, still he thought that an eye ought to be kept on bad air also.

Dr. Lewis said that those who had read his pamphlet would bear in mind that he did not commit himself entirely to the water theory, but at the same time it was written from the point of view of an advocate, and that he had deliberately overlooked, so far as he could, any evidence on the other side. He did it because, if the people were given any avenue of escape they would take it, and he left out a good deal of evidence on purpose.

He was surprised to note that the word cistern had been left entirely out of the discussion. He was a stronger advocate of the cistern than of the driven well, but failing the cistern, he advocated the driven well.

Dr. Lewis was asked if he thought the malarial germ could go seventy-five or eighty feet below the surface.

He said he believed it not impossible for the germ to go down the side of the pipe.

Dr. Pate said that there are other things about the well beside malarial poison. The old bucket and the old sweep system are very frequently the cause of the infection of the water by typhoid fever and other germs. It was almost impossible to get a wash-woman who would not go and wash the poison from her hands into the well by handling the chain or pole after they had been infected by the soiled clothes. He was sure that he had seen cases of typhoid fever arising from that source, and he recommended the bored well to prevent that infection as well as others.

Dr. Haigh asked about the reports of health from the different counties. The death-rates of several small places had been so high that they attracted his attention, and he asked if there was any special cause?

Dr. Lewis, in answering, read the reports and explained that the death-rates appearing monthly in the *Bulletin* were merely temporary. Many of the returns were worthless on account of the town authorities not taking proper care to render the reports accurate. In one town there are some 3,500 negroes, and months and months will pass without a single death of a negro reported. That is because the regulations in regard to reports of deaths are not carried out. The only way to make the statistics accurate is not to allow a dead body to be removed until a death certificate has been signed by a physician or a magistrate. A report under 12 per cent. he considered worthless.

The President did not consider the statistics as worth anything, but could see no way at present to enforce the laws. Many valuable points could be

brought out in a very simple certificate. It ought to cover, not only the age and race, but the place of birth and how long the person had resided in the place of his death. It would affect the sanitary history of a town very materially. A person coming to a town and dying in a month of something contracted before, affects the death-rate of a town and its sanitary history very injuriously.

That brings up another very important subject—that of acclimatization of foreigners. In looking over the deaths from yellow fever he had noticed that Germans died more rapidly than any others. A great many people died of so-called bilious fever of the type in Wood's Practice.

Dr. Guiteras, in studying the nature of the fevers of the South, believed some of these were cases of yellow fever unrecognized, and he says that a large portion of the proof is based upon the fact that newly arrived emigrants died of it.

The Conjoint Session then adjourned.

GEO. GILLETT THOMAS, M.D., President.

RICHARD H. LEWIS, M.D. Secretary.

[APPENDIX.]

PRESIDENT'S ADDRESS.

By John H. Tucker, M.D., Henderson, N. C.

Gentlemen of the Medical Society of the State of North Carolina :

Permit me to renew my acknowledgments for the honor which was conferred by your partiality in calling me to preside over the deliberations of this old and historic Society, an honor far beyond my merits or deserts, and when I consider the large number of able, learned and progressive physicians who constitute its membership, I am all the more impressed with a sense of my unworthiness for the distinction conferred and the responsibility imposed; but coming as an expression of your choice and a manifestation of your confidence and esteem, I count it the greatest honor of my life, for which I desire to offer you the thanks of a grateful and sincere heart. It is with sentiments of genuine pleasure we accept the privileges and opportunities so graciously afforded us for our meeting here to-day in this beautiful city of Goldsboro, a city so justly noted for the culture, refinement, public spirit and hospitality of her citizens, a city made especially dear to this Society as the home of so many of her true and loyal sons who, by years of active service in her behalf, have made themselves honored and loved by her members. Where else could the North Carolina Medical Society, or, for that matter, any medical society, find an environment more suited to its taste; and where else could our work, the advancement of scientific medicine and the promotion of its usefulness receive greater inspiration than at the home of these worthy gentlemen and accomplished physicians ?

The year just passed has not been specially prolific in furnishing new or exciting topics upon which an annual message for the edification of this

*Read before the North Carolina Medical Society, May 14, 1895.

distinguished body can be based, nor has recent scientific advances made medical discovery so phenomenal as to justify an infringement upon the work especially set aside for the several sections of this Society.

I may well, therefore, fear that the brief remarks which I may have the honor to deliver may smack of the "thrice-told tale" and leave but little impress upon your minds.

The last meeting of this Society, at Greensboro, has gone into our annals as one of the most brilliant of our series. The attendance was large, showing an increase over former years, notwithstanding the financial stringency of the times, and the proceedings were marked by harmony, unanimity of sentiment and fraternal feelings. The papers offered by the several sections were of a high standard, many of them being productions of real scientific value.

The feature which was especially pleasing to many of the older members, and the one which I desire to enlarge upon and the value of which specially emphasize on this occasion, was the increased number of highly interesting and instructive clinical reports furnished by members from different sections of the State, and which were so collated as to make prominent the anxieties, perplexities, difficulties, failures and successes of the several reporters to the degree of bringing the individual members of the craft in pretty close touch one with the other.

Our North Carolina doctor, from the very nature of his environment, is a typical bed-side observer; he is rich in expedients, methods and devices, and the profession at home and abroad have a right to share in his experience and to profit by his labors. Unlike his more favored city confrerè, he has none of the aids furnished by the modern laboratory to smooth out diagnostic wrinkles, or the trained hospital assistants to make easy an hazardous surgical venture, but, solitary and alone, he is often called upon to solve medical problems and to perform dangerous and difficult surgical feats, which would truly be appalling to the prolific brain and skilful hand of the most renowned specialist of the day; that his work is well and successfully done, meeting the high demands of his profession and the still higher demands of the humanities that surround him, the people of every hamlet, village and town in this grand old State stand ready to proclaim his virtues and maintain his cause; truly "the poor, maimed, halt and blind" have received the healing influence of his touch; that his work is worthy of publication and permanent registration, he begs you to consult the report made at our Raleigh meeting, the only attempt yet made to collect and tabulate the work of North Carolina's surgeons in civil practice, and short and incomplete as the author declares the report to be, it records an amount of surgical work which for brilliancy of conception, skill in execution and successful results, will stand all the tests for favorable comparison with any other section in this great country.

No wonder, in the discussion of this admirable resumè of North Carolina's surgeons, a gentleman imbued with sentiments of lofty love of his State and her people and a just pride in the achievements of his brothers, should declare that the "result only emphasized the fact that there is no longer a need for our people to go beyond the limits of the State for surgical operations." Many of the older members recall with pleasure and pride the day when our clinical work was in the lead, the brilliant contributions made by the late Drs. Manson, Norcum, Satchwell, Faison, Murphy, the Haywoods, Thomas, Wood, and others, men of intellectual candor and vigor, who were wont to bring from the riches of their experience cases illustrating their failures as well as their successes, and in the spirit of the conscientious enquirer for truth, would invite the fullest and freest discussion, and, if need be, the severest criticisms as regards diagnostic and therapeutic methods.

Let us have a revival of this work in order that this Society may receive the lessons of instruction and wisdom which the clinical experience of our own physicians and surgeons can so abundantly impart, and to that end I respectfully recommend that additional time shall be allotted to the two sections on the "Practice of Medicine" and on "Surgery," and that it shall be made an especial part of the work of the chairmen of these sections to secure, as far as may be practicable, such reports for the discussion of the Society.

A comparison of cases and an interchange of views by the profession leads to more careful collection and registration of facts, induces closer methods of observation and establishes a wider range of thought, the effect of which is to eradicate petty jealousy and narrow prejudice and in their place to substitute "generous rivalry and personal friendships," the aggregate of which is to unify and ennoble our calling and to bring incalculable benefit to the thoughtful and well poised physician. Our profession has won its grandest and most lasting triumphs through such agencies, and, despite the rapid and almost marvellous acquisition of knowledge in the several branches, the end is not yet, nor will it come until the misty chapter over which etiology presides is forced to disclose many of her hitherto unfathomed mysteries, until by our more philosophical method of studying physiology, pathology and chemistry, and the more recent science of bacteriology, together with the knowledge gained from vivisection and along other lines of experimental research, we shall have collected scientific data of sufficient strength to free medicine from the thraldom of ignorance, superstition, cheap empiricism and fatuitous guessing which for centuries has hampered its progress and restricted its usefulness.

Medicine lays no claim to deductive science—we do not start from axiomatic principles and reason to conclusions. It is highly inductive. Our facts are collected (the greater the number the more certain the escape from error) we arrange them in orderly sequence and from such data we evolve

principles which are being constantly refined and strengthened by the marvellous activities in the profession and the ready application of discovery and invention from every department of human endeavor which can be made useful for the cure of diseases or the promotion of human health. "To-day," says a writer of international fame, . . . "we view its votaries engaged, some searching for new facts and new materials, some studying new applications and better use of facts and materials already known, . . . some are searching the field, the forest, the earth and air, both for more knowledge concerning the causes of diseases and for additional remedial agents; some are in laboratories with crucible, test-glass and microscope, analyzing every morbid product and every remedial agent, separating the active principles from the crude materials and demonstrating their action upon living animals, while far the greater number are at the bedside of the sick and wounded, applying the knowledge gained by all other workers to the relief of human suffering. A more active, earnest, ceaseless and beneficent field is not open to your view in any other direction or occupied by any other profession or class of men."

The system of collective investigation, experimental research and true inductive reasoning has added a great store to our knowledge of the laws of life; pathological deductions have been made clear, and our therapeutic agencies have been placed upon a more rational and scientific plane—further and more enduring progress along these lines impose a grave responsibility upon our organized medical and other scientific bodies.

Time-honored tenets, theoretical dogmas and ingenious doctrines will not down at the mere bidding—they hold to their dynasty with boldness, and complete dethronement is accomplished only by demonstrable truths, logically deduced, and in no field can this work be more effective than through the medium of scientific discussion in the medical bodies of this and other countries. The duties of the hour forbid further generalization and suggest that I shall speak to you of matters of more immediate concern and graver import to the profession and people of North Carolina, and to that end I desire to ask your attention, briefly, to a consideration of some of the obligations resting upon our profession, and especially upon this Society, in the line of the prevention of diseases. I trust no apology will be deemed necessary by this body of progressive physicians for suggesting methods by which their work may be diminished rather than increased. Industrial corps, labor unions, farmers alliances and other like organizations view with grave suspicion the action of a member who would by any method hinder or lessen the business activities of their orders, but modern medicine under the new era, the medicine in whose service we are enlisted and at whose shrine we bow, speaks in no uncertain tone when the physician is sent forth to prevent disease, lessen sickness and prolong human life, and no priesthood proclaims a purer gospel than the simple and unselfish creed of him who wards off and

prevents the disease for the cure of which he would receive fame, fortune and power.

The late Professor Flint, the great teacher, the profound author and America's greatest physician of his day, in a posthumous address prepared for the British Medical Association of 1886, says: "The medical profession shall have reached an high ideal position when the physician, guided by his knowledge of diagnosis, the natural history of diseases and existing therapeutic resources may, with neither self-distrust nor the distrust of others, treat an acute disease by hygienic measures without potent medication. When this time comes a system of practice which assumes to substitute medical dynamics for the *Vix Medicatrix Naturæ* will have been added to the list of by-gone medical delusions."

Again, about the same time, the late Professor Samuel D. Gross, America's great surgeon, and the peer of any surgeon in the world, in his last public address, spoken at the dedication of the McDowell monument, says: "The great question of the day is not this operation or that, not ovariotomy, or lithotomy, or an hip-joint amputation, which has reflected so much glory on American medicine, but preventive medicine—the hygiene of our persons, our dwellings, our streets, in a word, our surroundings, whatever and wherever they may be; whether in city, town, hamlet or country.

"This is the great problem of the day, the question which you, as the rising generation of physicians, should urge in season and out of season upon the attention of your fellow-citizens, the question which, above and beyond all others, should engage your most serious thought and elicit your most earnest coöperation."

In full touch with these sentiments, which have come to us as a blessed heritage from men who have brought renown upon modern medicine—one representing the medical and the other the surgical thought of the day, and both crystallizing their views in an appeal for hygienic and sanitary reform and a more rigid observance of all that may be embraced in the generic term of preventive medicine, it is not surprising that this Society, under the leadership of the late Dr. Thomas F. Wood and a few faithful coadjutors, should have organized a Board of Health and sent it upon the mission of preventing disease, collecting vital statistics and teaching the people the benefits and blessings which come from a wise observance of sanitary rules and regulations.

It would be interesting to study the history of this Board, its struggle for existence, difficulties of securing public confidence, and still greater difficulty in disseminating sanitary teachings among the people, and that, too, under the most brilliant leadership which any service could possibly command, suffice it to say it has grown from a mere committee of this Society into an active, useful and indispensable part of our State governmental system, and is to-day, in its work of preventing disease, lessening sickness and prolong-

ing human life, accomplishing a service which entitles it to the admiration of this Soeiety and the confidence and support of the people of the State. This Board comes to us in conjoint session for conference, for encouragement and support, and the question which naturally arises is, Are we giving it the support which its relation towards us and the important interests it has in hand demands, and if not, why not?

Let us for a moment consider the question of vaccination. For many years past the worthy Secretary of the Board of Health has reported to this Society an increased indifference on the part of the profession and the people to this great preventive measure, and in a recent session he announces from the floor of this Society that, in his belief, nothing short of a visitation of an epidemic of this dread disease, small-pox, in our borders will arouse the people to the sense of their danger and impress upon them the necessity for vaccination. We have no statistical data upon which to base an opinion, but a conservative estimate would leave more than one-half of our people, ages and classes considered, without the benefit of this great prophylaxis, and when we consider the increasing number of epidemics of small-pox occurring in the more populous eastern States, the increased facilities for travel and the changed habits of our people with regard to travel, many thousands going and returning from the great centres of population, thereby subjecting themselves to the danger of contracting a disease which, once set on foot in our State, will grow into a conflagration more appalling, if possible, and more difficult of suppression than a prairie fire in mid-summer, we may well counsel together about matters of prevention.

This body is too technical for any exhaustive arguments in defence of the utility of vaccination, but in view of the existing apathy and the urgent necessities of the situation, I trust you will excuse some references along these lines. Medical and sanitary scientists teach to-day that small-pox is absolutely within the power of man to repress, and that a death from this disease shows criminal carelessness and should be charged neither to the ignorance of man nor the providence of God.

Standard medical authorities and current medical literature teem with indisputable proof that when compulsory vaccination is enforced, small-pox enjoys no lease of life and is scarcely known in mortality reckonings. In epidemics of small-pox it is a well-ascertained fact that the mortality in non-vaccinal cases is from 40 to 51 per cent., whereas in post-vaccinal cases it is only about 4 per cent., and yet, in spite of these convincing proofs, the anti-vaccinists, whose opposition is founded on ignorance and prejudice and whose arguments are supported by factitious statistics and misleading statements, flaunting their unallowed colors in the very face of our profession, assert that we suppress the truth as regards the frightful mortality and enormous sickness which attends vaccination, its complications and sequelæ. It is amazing that in this intelligent age there should be people in North Carolina who are

imbued with these sentiments! Physicians everywhere, of large experience, have seen vaccinal complications, but very few have seen death or permanent injury result from them, and none have ever seen "frightful mortality" and enormous sickness result.

Dr. Quine, in a recent address before the Medical Society of Illinois on this subject, shows that in the city of Chicago there were one million of vaccinations with only two deaths which could possibly be ascribed to the complications of vaccination, furnishing a mortality too trifling to give the opposition any standing in a count of physicians. Again, the Germans to whom our profession is so largely indebted for having directed our study of infectious and contagious diseases along rational lines, in an official report to the German government, in 1890, report 2,485,483 vaccinations without a single death.

But I will not tire you further with exposition along this line. The consensus of medical and sanitary opinion, in which this Society will heartily join, is that vaccination and re-vaccination affords absolute protection against small-pox, and when properly done, with pure vaccine lymph, there is positively no danger of death, serious sickness nor hurtful consequence from the operation, its complications or sequelæ.

In the sparsely populated condition of our State it would be impracticable to enforce compulsory vaccination, the law would be cumbrous, expensive and difficult of execution; but we can and should secure the enactment of a law making it compulsory in our public schools; indeed, we might go a step farther, and make a certificate of vaccination a prerequisite to entrance in any school whose doors are opened for public patronage, and we as physicians who are charged with the sacred duty of maintaining the health and promoting the well-being of the people, should resort more frequently to vaccination in our own private practice, remembering that the best "starting point" is at the physician's own household; through these combined agencies, in a few years, we may hope to have the larger portion of our people brought under the influence of this great prophylactic measure, and thus aid our Board in the accomplishment of a work which has occasioned so much anxiety.

The subject of tuberculosis is to-day one of the gravest with which the physician and sanitarian has to deal, and the necessity of lowering its frightful mortality by methods of prevention was never more keenly felt by our profession—a disease which, we are told, is responsible for one-seventh of the deaths from all causes in the world, furnishing an annual mortality greater than from all the infectious and contagious diseases combined, not excepting yellow fever and cholera, and rapidly increasing in our own State, especially among the working classes, will naturally engage your most serious consideration and elicit your most earnest efforts in the line of its prevention.

Since the publication of Dr. Robert Koch's classical paper, in 1882, announcing the discovery of the tubercle bacillus and demonstrating its generic relation to disease, there has existed but little doubt in the minds of sanitary scientists that this disease should be properly grouped with the infectious and contagious class and brought under the surveillance of our health authorities, in order that aggressive measures may be instituted for its restriction. In a recent publication one of the most distinguished of our American sanitarians briefly summarizes his views as follows:

1. Tuberculosis is a communicable disease and is distinctly preventible.

2. It is acquired by direct transmission of the tubercle bacillus from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air.

3. It can be largely prevented by simple and easily applied means of cleanliness and disinfection.

It is upon these propositions that the sanitary and health authorities of the country invoke the aid of our profession in devising means and instituting measures for restricting and lessening the frightful ravages of tuberculosis, and the mandates of professional honor and duty alike suggest a ready and willing response to the appeal.

The remedy is largely educational—the people must be taught, by publication, by lectures, by conference, public and private, in season and out of season, the true character of the disease, the danger of contagion, the source of infection, the method of disinfection, and, above all, the urgent need for rigid hygienic and sanitary treatment, personal and domiciliary, and in no way can this work be made more effective than through the medium of the faithful and conscientious family physician.

These questions are worthy of your most serious consideration, for they involve grave responsibilities and are important enough to command the best executive ability and the profoundest medical and sanitary knowledge.

The methods instituted by our health authorities and now generally practiced in our villages and towns for the restriction of scarlet fever and diphtheria, namely, notification, isolation and disinfection, together with more intelligent, persistent and systematic efforts at disinfection in typhoid fever and other zymotic diseases, have been the means of preventing an enormous amount of sickness and suffering, and doubtless of saving innumerable lives.

The more intelligent of our people everywhere are beginning to realize the value of this service, and the time seems most auspicious for carrying forward our standards, and by public addresses, lectures, sanitary conferences and other agencies to create in the public mind a sentiment commensurate with the great interests involved—at least, as educated and progressive physicians, let us demonstrate to the people the necessity for, and the value of, public hygiene and sanitation, and that as a science it is something more than a mere "jumble of unproved" hypotheses. Lord Derby, years ago, declared

that "no sanitary improvement worth the name will be effective, whatever acts you pass or whatever powers you confer on public officers, unless you create an intelligent interest in the matter among the people at large;" and this eminent authority further says: "With a low average of public health, you will have a low average of public morality and probably also of public (or national) intellect." The physical, moral intellectual and material well-being of all classes of our people will be promoted by an enlightened administration of public hygiene, and in no other direction will an expenditure of labor, time and money give returns so immediate and of such immeasurable value.

If we were to apply the money test as to the value of each citizen who dies from a preventible disease, as suggested by Dr. Farr and corroborated by other sanitarians, it would constitute a sum so large that capitalists would be startled. It is enough to say that the amount saved to the State, as thus demonstrated, would be so enormous that the most visionary dreams of speculation can offer nothing so alluring; but this side of the question belongs to the political economist, and not to the physician.

We promise as the result of our labors diminished sickness, improved health, increased longevity and the resultant blessings of happy and cheerful homes for the people of our State.

Statisticians tell us that the duration of human life has been advanced from twenty-eight and below to forty-one years under the ordinary workings of sanitary laws, and under more enlightened measures, that if mortality can be reduced to fifteen per thousand and maintained at that point, the rate will be advanced to fifty-four years; and if we can reach eight per thousand, as suggested by the distinguished Dr. Richardson in his beautiful picture of the ideal city of Hygeia, with her broad streets, lovely courts and faultless drains, her extended parks, silvery lakes and pure water, with a population "moral, cultured and intelligent," we will carry the rate up towards ninety. Hygeia is a city of the Millenium and these hopes are purely ideal and not within the range of present possibilities, but they are none the less valuable as pointers to the modern sanitist. Who can be more sensible of the value of sunshine, of fresh air, of pure water, of wholesome food, of effective drainage, of cleanliness and of thorough disinfection than the educated physician, and who can better impart this knowledge to those who anxiously look to him for guidance in matters affecting their health, happiness and well-being?

As members of a noble profession, and especially as members of this great and useful Society, let us carry forward the beneficent work; the soil is fertile and needs but the touch of the master hand to give forth an abundant harvest of good works.

In conclusion, my distinguished predecessor, in his able and instructive message, dealt so specifically with the needs and changes necessary for the

improvement of the work of this Society, and these valuable suggestions are still fresh in your minds, that I need say but little along this line.

I desire, however, to urge the importance of the recommendation for a change in our Constitution so as to give the Society a "Recorder and Librarian," whose office shall be at our capital city, and who shall be the lawful custodian of the Society's rolls, books, periodicals, instruments, pathological, anatomical and other specimens which may be donated or otherwise acquired," and to perform such other duties as may from time to time be imposed by the Society.

The necessity for this office is urgent, and it is believed, under proper administration, it may be the nucleus from which a great and valuable medical library will grow, and, under enlightened legislation of the future, we may, with some reason, hope to see established and maintained in connection with it, largely by State aid, a modern laboratory for biological and pathological work, and thus supply a want which is so grievously felt by the profession in the State. I desire, also, to direct your attention to the valuable service rendered this Society, the profession at large, and the general public, by our Committee on Legislation, supplemented by aid of the President and Secretary of the Board of Health and other prominent members of the Society before the committees of the last memorable Legislature. But for the active, persistent and intelligent efforts of this committee, our medical and health laws would have been greatly weakened, if not entirely abrogated, as a trifling tribute to the rapacious demands of the new apostles of political freedom.

I respectfully recommend that this, or a similar committee, shall be appointed, and that it shall be made the duty of the Committee on Nomination to form the committee.

The Committee on Necrology will furnish the names of our departed brethren, and later in the session will seek occasion to offer loving tributes to their memory. The list is not a large one, but it contains the names of several prominent and useful members, one of whom, Dr. Robert Lee Payne, of Lexington, achieved the highest honors of this Society, and was ever active and ready in extending its influence and promoting its usefulness.

They have all measured out honorable and valuable lives in their several spheres, and in passing from the scenes of active, busy strife of this life to the life beyond, they are, under the bidding of the Great Physician, "now resting from their labors."

ANNUAL ESSAY—EMPIRICISM.

By R. H. Stancell, Jr., Margarettsville, N. C.

It is our custom, ladies and gentlemen, to hold annual meetings of this Society, which is, so to speak, our common mother, our standard for judging each other's characters, and beloved by all of us, and at those meetings held in the various large towns of the State, in rotation, we have established the custom of presenting to the general public an essay and an oration prepared and delivered by one of our members. This year the oration fell to my lot, and I am thus given an opportunity to renew my acquaintance with Goldsboro. Walking your streets and reading your signs recalls other days, when I stopped here on my journeys to and from La Grange and the school there. It is pleasant to think of happy days and to greet old friends anew. I have first to thank the nominating committee for conferring this honor on me. I accept it with a due sense of its importance and my inability to do it justice.

Since these papers are for the general public, it is not well to select a subject which involves too much technicality, and, on the other hand, it is the orator's affair to amuse, the essayist's to instruct, and this is a golden opportunity to endeavor to present to the audience food for reflection in regard to some of the many crying evils which menace the present public health and the future well-being of society. There are many such evils among us, thanks to the cupidity and ignorance of mankind. I shall confine myself to the history, causes, results and present condition of one of them. I therefore invite your attention to some considerations of the subject of

EMPIRICISM,

that is to say, Quackery. The word is derived from the Greek "emperikos,"

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*Read before the North Carolina Medical Society, May 15, 1895.

a searcher after facts in nature, or experimentalist; but it long since degenerated from such a meaning. This was perhaps due to the fact that the empiric threw aside the reasoning faculties in his work because he did not need them, and therefore the profession of empiricism became synonymous with vulgar ignorance. Quackery exists in everything. There are pettifogging lawyers who are quacks, ranting preachers who are quacks, camp-followers and stragglers in war time who are quack soldiers, and there are quack doctors, whom, like the poor, we have always with us.

The most expressive definition of the quack doctor is: "A man who pours drugs of which he knows little into a body of which he knows less"; and, while this was applied by its brilliant originator to the entire medical fraternity, it so plainly refers to quacks that it is worthy of mention.

The history of empiricism is an interesting study in human nature extending over ages and serving as an indicator to point out and a monument to perpetuate the memory of the follies and weakness of man at every age and stage of his existence. It is as old as is medicine itself, having been the only kind of medical science which the Egyptians possessed, and the Jews, deriving their knowledge from the Egyptians, pursued the same plan; hence the marvellous entered largely into every cure, and the sacred writings furnish numerous proofs of this weakness of the human mind. It was the Greeks who first cultivated physic as a branch of philosophy and reduced the mass of accumulated facts to a system. From the specifics of the temple and the rubbish of popular credulity Hippocrates gave medicine the garb of a science and so enriched it with experience and observation that his writings are still worthy of consideration, but he could not overcome the fondness for empiricism; while men of science and honor and seekers after truth followed his dictates and improved his plans, popular credulity preferred the charm, the amulet or the wonder-working nostrum.

At the time of Galen and Celsus empiricism was a regular system, having been reduced by Serapion. He saw the field of medicine occupied by his brother physicians, who acted upon and strove to improve the doctrines of the day. Being desirous of taking a short cut to fame and wealth, he proposed to treat all diseases by a simpler method. He proclaimed it foolish and unnecessary to study pathology or etiology, the nature and cause of disease, and declared it was only necessary to be acquainted with the action of drugs in order to be a physician. These opinions of his were held by numerous followers who taught that, by accumulating a mass of fixed facts, invariable rules of procedure could be established in certain cases. There have been empirics ever since, but of late years they confine themselves to advertisements and do not presume to argue or expound their views in the presence of scientists. Like the stragglers of an army, they are quiet and humble in the presence of a soldier, but woe to the wounded or weak who come in their way.

Empiricism gained additional strength at a subsequent period by the introduction of chemistry into medicine. Its fanciful theories were aided by the dreams of the early alchemists. Paracelsus was the first to proclaim a hope of immortality to mankind by the use of his chemicals, few in number, though said to be all powerful; but Paracelsus died young and gave the lie to his boastful assertions, though his deluded votaries still continued to teach his methods.

Chemistry alone, however, did not keep this searching after short-cuts alive. The charm of healing in certain diseases has been claimed as a royal prerogative, and the mere touch of the sovereign's hand has been held sufficient to cure diseases of the most loathsome kind.

The influence of the royal touch began in England with Edward the Confessor. It was one of the artifices which this pious Prince used to excite respect, and his successors, however little they may have believed in it, did not lay aside the imposition. A form of prayer was even composed to be said during the ceremony and was employed as late as the time of Charles I. His son and successor did not believe in the practice, and is said to have had his hand roughly handled at various times. And it is said that he even made cures, giving sight to the blind and smoothing the fungus of a republican nose. His neice, Queen Anne, of pious memory, was the last to dispense the gift, and one of the last recipients was the learned Dr. Johnson, who really ought to have known better.

Empiricism received its first check at the hands of King Henry the Eighth, who acquiesced in the foundation of the College of Physicians, which examined into, and passed upon, the qualifications of all those who desired to practice medicine. The idea of its establishment first originated with the celebrated Linacre, who communicated it to the great Cardinal Wolsey. Henry was anxious to reform medicine in order to take its practice from the priests, into whose hands it had almost entirely fallen.

The chief hot-bed of empiricism at that period was Germany, which, being the fertile school of alchemy, naturally fostered errors and ran to elixirs and wonderful potions.

Perhaps the most noted empiric of this period was one Antony. He was an Englishman, educated at Hamburgh, who, on his return to England, announced the discovery of a most wonderful panacea extracted from gold. He published a treatise in support of his theory. It required a treatise to advertise a nostrum in those days, the *Caucasian* not having been founded. Paracelsus first showed that the metals possessed powers as medicines and the alchemists continued wedded to his opinions. They held that since gold was the first or King of metals, it ought to possess unlimited powers in the treatment of disease, could a proper solution of it be made.

Antony's potable gold brought him into persecution, but gained a comfortable living for his son. The zeal of quackery found wonderful hopes for

good in other bodies too. The air was supposed to contain a vital principle which the empirics strove in vain to concentrate and exhibit. It was abandoned and another object, "An original matter," which contained the principle of immortality and was supposed to reside in gold, was chased till, like the *ignis fatuus.* it disappeared in the darkness and left its silly followers to struggle out of the slough, into which it had led them, as best they might.

Another fallacy of the time, called judicial astrologv, held that the celestial bodies influence the human frame. As far as humans go, this idea long since disappered, but it is now, even, believed by numbers of people in this State that meat butchered in certain phases of the moon will lose largely in weight and that a wounded animal will bleed more profusely during the moon's increase than during its wane. Such was the progress of empiricism till the beginning of the eighteenth century, when it became divided between pseudo-science and open trade. Under the first of these come the early electricians and also galvanism; under the second the selling of nostrums from the stage and warehouse. Electricity in the hands of the empiric, Graham, promised the art of living in the world a hundred years with health and happiness and the propagation of offspring far more beautiful, both mentally and physically, than the present race of puny and probationary mortals, who crawl and fret and politely play at cutting each other's throats for nothing at all on this terraqueous globe. But Graham, like Paracelsus, died young and set no example of the truth of his precepts.

Galvanism, better known as mesmerism, gained its greatest *eclat* in the hands of Mesmer, a German. He proposed to cure all diseases by what he called animal magnetism. His house was converted, with seeming benevolence, into a hospital, where crowds of the lame, halt and blind came and went away cured. Its bubble burst in Germany, however, and Mesmer fled to Paris, where he formed a society for diffusing the art. The pupils he bound by oaths to secrecy, but their conduct was so manifestly reprehensible that the government ordered a commission to enquire into the discovery. Dr. Benjamin Franklin and Lavoisier were members of this commission, which declared in its report that the effects were produced by the influence of the mind of the empiric over that of the subject. The powers of imagination being aroused by contact and excited sensibility were easily directed by the practiced stronger will, until results arose which were astonishing and oftentimes entirely unexpected. This report put a stop to it for a while, but presently it rose again in the form of Perkins' Metallic Tractors. These were two bits of metal possessed of supernatural powers. A society was formed to extend their benefits, but they are no more. They had their day of greatness attested by the clergy and nobility. The Archbishop of Canterbury actually endorsed them, but recently, when a set of them was presented as a curiosity to a medical society, they were so utterly forgotten that it was necessary to have a committee search for their history *Sic transit gloria mundi.*

The charm is fled, they are no better than two skewers, for Haygarth's experiments fully exposed the fallacy. Finding that two thin bits of iron could no longer be sold for five guineas, Mr. Perkins quietly decamped with what he had accumulated.

The stage and patent medicine warehouse were now the favorite working places of quacks—the stage is the elder of the two. There the quack could descant upon the virtues of his preparations after bringing the audience into good humor by the tricks of a clown who preceded him. The dress of each was well suited to his part. The doctor in green and gold and the clown in a fantastic rig.

The green ointment and alterative pills always found a sale among the populace, and, as a proper set of patients was always at hand to avouch the truth of every miracle, the doctor met a courteous reception as he travelled from town to town.

But the stage did not suit the taste of every quack nor could patients be so easily supplied with nostrums from it as in a more private situation. Thus the patent warehouse came to be opened. The quack found it the best place for the sale of his nostrum, for patients could buy it there amid the multiplicity of articles without their conduct's being observed.

By far the greater number of these nostrums are taken either from the Pharmacopœia or else they are the private formulæ of physicians, which have fallen into the hands of persons absolutely ignorant as regards drugs, who either believe them good for every malady or else deliberately advertise them to be cure-alls when they know better. So great has been the popular favor for patent medicine that the regular druggist has been compelled either to sell them or lose by far the greater portion of his trade. The evil has grown until to-day fully one-half of every drug store is devoted to patent medicines.

This may be said to be the history of the evil. Its real origin has been in the hearts of wicked men since the days of Adam. Whenever anything succeeds it is sure to be imitated, and there are always to be found men who are only too glad to live by imitating and claiming knowledge which they do not possess, but which they are able to make the ignorant think they possess.

PRESENT CONDITION AND DIRECT RESULTS.

So much for its origin and history. Born of ignorance, reared, continued and propagated by the ignorance of the masses through ages, it to-day holds sway to an enormous extent throughout the entire world, but especially in America. Physiology and hygeine, which common-sense would suggest as being the proper study for children, are ignored in most schools entirely and receive only a casual bit of attention in any. Well has it been said: "The proper study of mankind is man," but the legislators and instructors of to-day take the stand that anything else but man is his proper study. This

does not apply to Goldsboro, however. After our entertainment of last night it is clear that through her excellent schools she is laying in a stock of healthy boys and girls who are sure to do credit both to their fair city and our beloved State.

The American people are a reading people, but there is no other thing of which the average American is so profoundly ignorant as of the structure and function of his own body. Nine people out of ten think that the same tube serves to convey air to the lungs and food and water to the stomach, while the fallacies of the torpid liver and "taking cold" are not even confined to the laity. Regularity of habits is unknown in this country, and whenever there is irregularity some ill-result must follow. When it happens what does the average man do? If it be irregularity in his shoe, he consults the cobbler; if it be irregularity among his buttons, he places himself in his wife's hands; if it be irregularity in his watch, he speeds to the jeweler; but if it be irregularity in his stomach or brain, does he consult the skilled workman? No, he takes down his bottle of patent stuff which he has seen advertised somewhere and he proceeds to dose himself. He recognizes the delicacy and value of his watch and does not understand its delicate arrangement of wheels, levers and jewels, and he dare not interfere with their frail continuity by thrusting a rude hand into the delicate mechanism. He does not recognize the marvellous beauty and the wonderful construction of his stomach and entire system, the nervous system ruling the whole yet influenced by any, nor, above all, does he know and understand, as far as man can understand, that wonderful power of interstitial change which is the difference between living matter and dead. Yet, in his ignorance, he dares to rudely meddle with his very life.

And, strangest of all, let some one who is familiar with the delicacy of this machinery but speak to warn him of the risk he runs, and what does he answer? You are a doctor—of course you are going to say it is wrong because it hurts your business. And it takes but few such answers to check the zeal of the most earnest. The doctor goes on his way knowing only too well that every dose of patent medicine taken is a direct increase in that doctor's bill which the ignorant one will surely have to make when nature rebels against the irregularities, imprudence, excesses and dosings to which she has been sujected.

Almost every person uses these drugs to some extent, and statistics prove that a large proportion of opium fiends begin the habit in this way, while many of these nostrums contain alcohol and are often the exciting cause of its terrible hold. They are sold in almost every general store, in all groceries and in most drug stores. Any one is at liberty to prescribe, buy or sell them; and this is strange, for if a person wishes to practice medicine he must undergo rigid examinations and prove himself competent; if he would be a druggist, he must serve an apprenticeship and then register, but any one, however

ignorant or incompetent, is at liberty to prescribe, buy and sell these drugs which are advertised to do more than any doctor dares promise, and contains ingredients which druggists are not allowed by law to sell.

The traffic in such medicines is something enormous, there being no restrictions upon the sale of them and there being such a large profit upon them. Thus a pint of cheap red wine, two ounces of sulphuric acid and enough water to make a gallon, when mixed and placed upon the market under a high-sounding name, sells for three dollars. The market is flooded with drugs guaranteed to cure all the ills the flesh is heir to, and year by year the traffic grows. Some of these drugs occasionally do good, no doubt, as they are, in most cases, either taken from the dispensatory or else are the prescriptions of some physician, but the wrong is not in the drugs themselves so much as in their indiscriminate use and ignorant application.

While the people in general have advanced so far in the last two centuries in matters pertaining to government, architecture, transportation, manufactures and all the other branches of knowledge, they have not stirred an appreciable inch in obeying the philosopher's command, "Man, know thyself"; for while the upper classes of late years are somewhat improved, the majority of the people are to-day as deeply ignorant of themselves as were their forefathers two hundred years ago. For instance, there was no more wildness in supposing potable gold to cure all ills than there is in supposing Radam's Microbe-Killer to do so; there was as much probability of the existence of an essential matter in gold as there is of the existence of a bichloride of that metal.

Mesmer's animal magnetism was no worse than the hundreds of galvanic and electric belts advertised daily. And the Archbishop of Canterbury's endorsing the Metallic Tractors of Perkins was no worse than the advertisement, in the papers of this State, of a Justice of the Supreme Court's certificate attesting the miraculous qualities of the "Electropoise." These sad facts *prove conclusively* that the people in general know no more now of themselves than those who lived two hundred years ago did. The existence of empiricism is an evil, in the present age a great evil, the own true child of ignorance and greed; but let a scientist declare that the high-sounding theory of some new fraud is false, and he is immediately accused of personal motives. The medical profession has been abused from the beginning of quackery by all quacks, and thus ignorance and calumny are enabled to defy knowledge and truth by crying to the ignorant that the doctors abuse their products because they are opposed by them.

These people catch at any and every new idea which promises to attract attention to their wares. No theory is too fanciful to be advanced and no statement too manifestly untrue to be made by them in their advertisements. They know that the intelligent classes will not know enough of nature to tell whether their claims are possible or not. And that the ignorant people know

absolutely nothing of such things. They also know that every person has some idea of his body's structure and mode of action, however wrong that idea may be. And they know that the influence of the only class who can expose them can be neutralized by the cry of self-interest, and accordingly they grow rich at the wrecking of thousands of otherwise healthy bodies.

"Alas for the rarity
Of Christian charity
Under the sun."

The liquor traffic does no more harm to the race than this. Oh, what a field for the prohibitionists. A few of the most bare-faced fallacies of the day may be mentioned without offence.

The electropoise is said to put the skin in such condition that oxygen readily passes through it and enters into the capillary circulation. Every chemist knows that such a state of affairs would in a few moments effect spontaneous combustion and leave the body ashes. Keeley's wonderful anti-liquor salt is said to be bichloride of gold. Chemists know that as long as gold and chlorine preserve their present valencies there can no more exist a bichloride of gold than there can a bi-pig-ate of chicken or bi-horsate of man, and so on; one can find somebody silly enough to believe any theory or fancy. There is no notice taken of the traffic by the law. It seems strange to require a druggist to register and be examined before he can dispense prescriptions, and at the same time to allow any person who chooses to dispense the same drugs when they are disguised in some mixture and patented.

Another fallacy is the inhalation of oxygen. "The inhalation of oxygen," says S. Colis Cohen, in *Hare's System of Therapeutics*, "has had more or less enthusiastic advocacy since the days of Priestly." Especially have advertising quacks in America, for the basest purposes of selfish gain, exploited oxygen and its mixture with nitrous oxide under various taking names, reaping for themselves a bountiful harvest of dollars and for death a bountiful harvest of lives. Newspaper proprietors and magazine publishers are not without responsibility in this matter, for the conscienceless scamps who prey upon the misery and the credulity of their fellows, have been quick to perceive and to avail themselves of the reading habits of the American people, and their deadly falsehoods are carried, on the covers and in the most conspicuous columns of the best and the worst journals and periodicals, into the homes of the credulous rich and cultured, as into the tenements where the credulous poor and ignorant are herded.

Physicians, as guardians of the public health, owe it as a duty to the community to denounce and expose this crime against the weak and helpless and to arouse in the consciences of the accessories a just recognition on their part of the wrong, nor should we longer shirk this plain duty because of the fear of the flippant reproach of interested motives. Should we not be interested

beyond measure in the rescue of the sick from their enemies and in the purification of the profession of healing from the stain that camp-followers and mercenaries bring upon it? In God's name, then, let us, being without reproach, have no fear of the taunts of the thoughtless and of the sordid, but lend our best endeavors to save the community from parasites more deadly than the tubercle bacillus.

As has been already stated, nothing can be too wild or chimerical for the gullable people to believe. Barnum says: "Truly the American people love to be humbugged." Thus a nickel ring on the little finger, is said to prevent and cure rheumatism. But perhaps of all the crazes which ever existed those higher-priced preparations, the ingestion of which, it is claimed, makes labor easy and robs confinement of its horror, while insuring the safety of both mother and child, are the craziest. Yet numbers of people believe it to be true and purchase the article at an exorbitant price. And this leads to mentioning a few bare facts concerning the average woman. She is not by any means confined to the poor and unlearned classes either. Two great necessities, contingent upon mere physical existence, confront every woman; by conformity to their laws she must win or lose, live or die. Nature insists upon self-preservation and preservation of the species. Moreover, she scorns to perpetuate a deteriorating type. How little the ordinary wife and mother, even in these boasted *fin-de-siecle* days, knows of the real significance of life and of those mighty forces which know no deviation; and how little she is prepared for the parts she must needs play, whether she will or no, in this fierce struggle for mere survival. If it takes three years of constant study and clinical experience to fit a man to wait upon a woman in confinement, and to faithfully discharge the few small duties nature has left undone at the time, how much longer ought it to take to fit that woman for the part she has to play in the preceding months and for the responsibility which she then assumes for life. Perhaps some of this Society's members know of women who can translate German, read French at sight and scan Latin hexameters and paint flowers, but who could not, for their lives, tell (when they had become mothers) how much clothing the baby needed nor if it was being properly fed. What all women need as a preparation for the highest function of their lives is thorough training in some fundamental principles of anatomy and physiology. Suppose the above-mentioned woman had been taught anatomy and physiology as persistently as she was Latin and perspective, would not her children have a better chance? And is it not the duty of every parent to give his children every possible advantage in this race for the survival of the fittest which we call life?

All women should be taught these things and trained to observe them. That training should begin at an early age, so that when menstruation begins it should be expected and understood. From fourteen to eighteen or twenty the young woman's training and education, in school and out, should be to-

ward physical perfection. Systematic exercise in the gymnasium and out of doors should be a daily certainty, and the full process of gestation and parturition, with the development of embryo, and the growth and needs of the infant, should be unfolded in continuous instruction. Any interference in the order of development would thus be taken in its incipiency and interference with nutrition be promptly checked and righted. When women turn their attention to acquiring fitness for motherhood there will be a great decrease in the number of sick women and a marked increase of intellectual power in men. Oh, let it be soon.

Pardon this digression to come back to patent medicines. If such medication is a necessity it ought to exist, but it ought to be placed on an equal footing with other necessities, sugar, for instance. Why should not the government profit by this traffic as it does by the manufacture of sugar, or rather, why should we not pay a tariff to New England on evil things as well as on good ones? If these articles are to be thus indiscriminately employed why should not government make them subservient to its interest by taxing both those of domestic and foreign manufacture. Assuredly the lives of our citizens should be guided by their representatives from foreign enemies and domestic treachery, whether it come in the form of a bayonet, a bolus or a pill.

So much for the medicines and apparatus, now about quack doctors. Their methods are manifold and strange. One establishes institutes, advertises to treat all diseases at so much per month and furnish medicines, and has crowds of patients. Another takes quarter, half and whole-page advertisements in the newspapers, travels in a private car, heals by faith and has hundreds flock to him; he continues this for a certain length of time, then his advertising stops and he fades away—jailed for fraud. Hundreds of others advertise themselves as specialists in some form and try to see how much they can abuse honorable practitioners. They travel when they have played out. One of their favorite so-called specialties is catarrh, which they make out to be a dreaded constitutional disease quite beyond the power of the average practitioner. Their spelling, however, is generally poor outside the advertisement. Another specialty much harped on is, as the advertisements read, all irregularities of the genital system. Their advertisements frighten ignorant people into going to them or trying their specifics. They are old specialists always, have been in practice for years, guarantee a cure and consultation free.

North Carolina is not much infected with this particular species, thanks to the wise law which requires physicians to prove themselves competent before they can practice.

He is seen here, though, in two forms—one of these is the "Scientific Optician," who calls himself Professor in his advertisements, but Doctor everywhere else; who advertises to fit glasses to all eyes, and says on his card, "consultation free." He uses simple methods, can fit glasses to old people

fairly well when they have only presbyopia, but will injure the eyes of any young person for whom he prescribes and fits glasses, for the reason that he has no right to use mydriatics, and hence dares not. During the past year one of these has been going from town to town advertising himself as a doctor and an eye specialist, and publishing in the papers certificates as to his ability and being what he claimed to be, from some of this Society's most prominent members. It is needless, of course, to say that these gentlemen never gave any such certificates.

The other form is the physician who, after failing to get or keep a practice in the usual way, begins to advertise in the newspapers and get himself puffed. Sometimes he opens a sanitarium for the treatment of something special, sometimes he goes from town to town advertising himself as a specialist. In either case well-informed people scrupulously avoid him and his methods.

There arise year by year sects and schools of all sorts of empiricism. Christian science is one of those which, after a few years of existence, has just built a temple in Boston, the home of isms, at a cost of two hundred thousand dollars. They hold that man is incapable of sin, suffering and death, and that all material things may be overcome by simply exerting the will. Thus one gravely says that she awoke one morning with an abscess in the throat, which disappeared in the course of the day without opening. The chief of the sect claims to have set and kept set several broken bones by faith, although she admits that it required great faith, more than the average subject possesses.

> "When Bishop Berkley said there was no matter,
> And proved it, 'twas no matter what he said;
> They say his system 'tis in vain to batter—
> Too subtle for the airiest human head,
> And yet who can believe it—I would shatter
> Gladly all matters down to stone or lead,
> Or adamant, to find the world a spirit,
> And wear my head denying that I wear it."

HOMŒOPATHY.

Of all the many mediæval dreams we have spoken of, there is only one whose survival challenges our attention at the present time, and this is the so-called Homœopathy or Hahnemannism. The essential doctrines of Hahnemann were three: The first of these taught that chronic disease is the result of a general poisoning of the system by a humor, which, when it finds its way to the surface, causes the itch. Microscopic investigations and the discovery of the itch insect long since gave the quietus to this theory.

The second doctrine of Homœopathy is the so-called infinitesimal doses.

This is not a simple affirmation of what every one knows to be true, namely, that certain substances are so octave in their relation with the body that the most minute quantity of them impresses it; nor is it a statement that all or any drugs in minute quantities exert an influence antagonistic to the effect which they produce when in large quantity. It does teach that a substance like chalk, which is, in large doses inert, becomes, under the influence of trituration and dilution, possessed of intensely active properties, as though there had been liberated from it a spirit of healing which had been imprisoned in its natural grossness. He also taught that the activity of a medicine depends upon the number of times it has been shaken and that medical inertness by excessive shaking might be converted into almightiness. Remembering the numbers of his followers, surely the bitterness of Carlyle seems justified when he said: "Where ten men are gathered together, there are nine fools."

It is the third doctrine which has been, and still is, the rallying point of his followers, and which is claimed to be the fundamental truth of his teachings—this is the so-called law of *similia similibus curantur*, in accordance with which a symptom produced by a disease is to be cured by a small dose of a remedy which, when given freely to a healthy man, will produce the same symptoms. This law, which has immortalized the name of Hahnemann, was really laid down by Hippocrates 2,300 years ago—it must possess some measures of truth to have survived so long. And it will sometimes lead to a good result. Let us suppose a case of vomiting. Ipecac, when given in large doses, will cause vomiting, but under certain circumstances, when given in minute quantity, it will relieve it. Witnessing such administration, the by-stander cries, "Great is *similia similibus curantur*, and Hahnemann is his prophet." But let another case appear which is increased by ipecac and relieved by opium, which does not vomit when given to the healthy man, but makes him insusceptible to the action of emetics. Now, the upholder of *dissimilia similibus curantur* cries: "Behold, I have the truth—the remedy which produces the opposite of the symptom is the remedy to relieve the symptom." It is plain that the truth lies in neither. A law of nature has no exception, and if exceptions be found to an alleged law it is plain that the law is only an allegation and not a reality. If we were to find that at times weight disappears and objects not supported fail to fall, then we would know that the Newtonian generalization of the attraction of gravity was not a law. Neither Homœopathic nor Allopathic doctrines are laws; they are mere expressions of coincidences, each of them base coin, gilded with just enough of truth to pass current with the ignorant and unwary. Symptoms are the mere surface play of disease, marking only with great uncertainty the currents, whirlpools and rocks that lie hidden far underneath. Symptoms apparently the same may be the outcome of bodily conditions differing widely. Any system of treatment based directly and immediately upon

symptoms must be untrue. It is not possible to find any therapeutic law which shall directly relate symptoms to remedies and enable the practitioner in ease and ignorance to combat disease.

In Europe the fallacy has almost played out, there being only 1,022 practitioners of Homœopathy in all Europe, by far the most of whom are in Spain, the lowest country there intellectually.

In America, and particularly in New England, it is holding its own, probably, because individualism here runs riot and we have irregularities of all kinds in religion, philanthropy and medicine.

The peculiarities of the people and the deficient qualifications of the regular profession in those States where there is no law regulating practice are other causes, but the most notorious of all is—the American Homœopath does not practice Homœopathy. This is acknowledged by the New York Homœopathic Medical Society, and has been by them repeatedly affirmed in the *New York Medical Times.* They have also proved that every one who disputed the statement was wrong, and that many physicians who denied practicing in any way except by their dogmas were really doing so every day.

In New England, the deteriorated Puritan stock is always ripe for grasping at individualism, and it is not strange that one and the same section should be the home of Homœopathy, Protection and Christian Science.

"Our little systems have their day—
They have their day and cease to be."

CAUSES.

What are the causes of the quackery which exists in this country to-day? First, the credulity and ignorance of the mass of our people upon all subjects related to physiology and hygiene. Second, the cheapness and convenience of treating oneself without having to confide in a physician. Thirdly, the criminal recklessness with which the soulless press allows itself, for a consideration, to be made the tool and accomplice of these seekers after wealth, by giving up column after column and page after page to the advertising and puffing of their nefarious mixtures. Fourth, the giving of certificates of endorsement by persons who are supposed to be in a position above reproach. Thus, certificates of preachers are much sought after, and there are few papers which do not contain a certificate from some preacher endorsing some nostrum. Fifth, certificates from physicians, which is worst of all. Sixth, unscrupulous druggists.

The ignorance of the public in regard to matters pertaining to the body is woeful. More knowledge must be carried to them or the race will finally dwindle away to nothing. Public schools are now required to teach physiology to some little extent. It ought to stand next in importance to reading in the list of studies. When people know how to treat and care for their

bodies the necessity for medicines of all kinds will decrease. It is clearly evident that physiology and hygiene are not popular subjects with the people. Why is it? Every one will concede them to be the most important, and every one will agree that health is the most precious of all man's possessions, yet it would be almost impossible to fill a small hall with persons willing to listen to a lecture upon hygeine. The reason is that most persons have heard nothing about it till they arrive at maturity, when they theorize that, if they have lived thus far without paying attention to such a subject, they are willing to risk it the rest of the way. It is because its importance has not been impressed upon the young people—the boys and the girls.

The cheapness of these medicines as compared with the fees of a physician is a powerful argument in their favor to the uneducated mind, and the privacy is the greatest inducement, perhaps, to a certain class. A man finding himself afflicted with some trouble, or a woman annoyed by some irregularity, must of necessity feel a delicacy in confiding their ills to any one. This is, to some extent, true modesty, than which there can be no brighter virtue, but let them but begin with patent medicines from either of these motives, and in most cases they eventually fall into the doctor's hands, and tthat, too, with the cost, and the shock to modesty increased in direct ratio to he time spent in trying to avoid the natural consequences of wrong-doing or heredity.

The cause of all others, however, is the advertising in the newspapers. The press is the most powerful engine the sun shines on, and verily the pen is mightier than the sword. The average man of the people believes everything he sees in print, and to his mind the flaunting half-page advertisement is as true metal as the brilliant editorial. That it is wrong to allow such advertising of quack remedies no one can doubt, but the papers allow it even when they know the claims set forth are preposterous misstatements, intended only to deceive the public.

Civilization, says Donan, culminates in the power of the press and the bounds of civilization are limited by the circulation of the daily papers. There is no civilized speech nor language where their voice is not heard or their influence not felt. There is no enterprise, or business benefaction, or villainy that cannot be pushed into triumph or driven to failure by the newspapers. Great reputations are created by them out of nothingness and wrecked by them for amusement. In this country governors, senators and even presidents are made by them—often of material intended for tinkers and peddlers, base-ball players, gamblers, shysters, pickpockets and thieves.

A few weeds soaked in bilge water, or a little calomel rolled in sweetened dough, with plenty of printer's ink, will make a millionaire of any pauperistic quack in five years time, whether it is the brains, hearts, livers, lungs, kidneys or gizzards of newspaper-reading gudgeons, his humbug panacea claims to regenerate.

To say nothing of the practice of certain dailies in charging a great price for their subscription and then making one-third of their matter patent medicine advertisements, from a business standpoint. If a grocer was to make a third of his sugar sand, he would be quickly condemned; why, then, should the press be allowed to insert such vile things as the big G advertisements and those of tansy and pennyroyal pills in the columns which all people, refined or not, are to read. The press has unlimited influence over the minds of a great class Their influence amounts, certainly, in this country, to power. Power has never yet been abused, but that it reacted and severely injured the abuser There will be a reaction at some time in this case.

The practice of giving certificates as to the efficiency of these things is a field which it is difficult to clear.

Many a preacher, hard up for cash or some other object, gives a certificate to these people, which they publish. Very many preachers take the mixtures and perhaps very many are benefited at the time and give the testimonials in good faith; as to those who give them for the first mentioned cause, nothing further need be said. Those who are honest and are asked to do so, should remember that patent medicines have become an evil of the greatest magnitude, against which it is the duty of every person who wishes well to society and the race to oppose the barrier of his judgment, as well as against the numerous quacks themselves, who thus ravage the purses and constitutions of the dupes of their barefaced impositions. That when they sign such an instrument they cast their own good name and character against all honest effort, true philanthropy and the cause of science.

What can be said of the physician who so bemeans his art and judgment as to publish endorsements of these preparations? It is usually found that he either has never received a degree or that he graduated from some one horse medical school, where attendance upon two five months courses of so-called lectures was the principal requirement for graduation. This particular kind of doctor is rapidly being exterminated since the *debut* of the State examining boards except in Kentucky, where he is said to flourish still in his pristine glory.

The last cause to be noticed in this paper is the uncrupulous druggist Druggists are at times unscrupulous. An ignorant person comes into the shop. One-half of it is filled with patent articles which yield an enormous profit. The patient states his case, the druggist recommends a nostrum, which the ignorant person purchases and retires with. Sometimes this program is varied by the purchaser asking to see a doctor, when the druggist says to him that he had better tell him what his trouble is, and, after learning it, he persuades the patient to purchase a nostrum, or else prescribes for him himself. Of course it is the height of empiricism for druggists to prescribe, and honest ones will not do so except in an emergency, when a physician cannot be had. Druggists are found who excuse their prescribing and keep-

ing quack medicines for sale on the ground that they are in the drug business to make money. Yet we find their national association passing resolutions to the effect that the drug clerks employed in the army and navy should have the rank and pay of commissioned officers. Of course men who pursue a trade simply for the money they make out of it, can never be anything but tradesmen, that is, they can never lift their trade to a higher and more honorable level, and if pharmacy is to be only a trade to make money out of, then its usefulness to the physician and the public is at an end, for the druggist is a necessity only when he serves the interests of three classes; should he neglect either of the three his usefulness decreases in exact proportion. His first care should be to protect and properly serve the patient. Next he should look to see that the physician's interest is protected, and when he has done this well, the gratitude of both physician and patient enable him to amply look after his own.

REMEDY.

And where, pray, is the remedy?

It can be expressed in one short word, and that word is education. The ancient empirics strove for many a visionary panacea. Had they employed the same effort in teaching the people what was then known of nature's laws, how much better it would be now for the race. You must see to it that the children of to-day are taught to respect, understand and care for their bodies as well as their minds, and their physiques must be cultivated and developed as carefully as their mental faculties are.

The importance of hygiene must be impressed upon the young people from the A.B.C. book through the school and high school and into the University, at which latter place it ought especially to be impressed. The study of Latin and the other dead languages and the higher mathematics are, it is true, most excellent mind-training, but none of them better than physiology, and there is no study more interesting when properly taught. And taught these things must be before the world grows much older.

When the people know as much as they can about the laws and conditions governing their bodies, the high-flown theory will not be so enthusiastically believed nor the accompanying drugs so readily swallowed.

The honorable profession of Medicine, which has throughout the ages calmly watched the rise and fall of thousands of hobby theories and nostrums, realized long ago that these things would exist just so long as the people are ignorant and credulous; therefore, through all the years honorable physicians have striven to teach man his duty to his body. Slowly year by year are their efforts being crowned with success and more and more concerning nature is being studied in the schools.

It is the duty of every well-wisher to the race to cast the weight of his influence with the right side; it is the duty of every parent to see that his children are taught these things, and it is the duty of every one who can to know them; no matter if you have lived twenty, thirty or fifty years without them, you should still find time to read on these things, and having read them to consider well.

There is no reason to believe that empiricism will ever cease. Most probably, like the gold brick swindle and the green goods fake, it will continue to be an heritage to the ignorant even from generation to generation. But as knowledge increases it will grow less; for knowledge is the only panacea.

ANNUAL DEBATE—THE ABUSE OF ALCOHOLIC STIMULANTS IN PRACTICE.

By A. A. Kent, M.D., Lenoir, N. C.

Mr President and Gentlemen:—As your appointed Leader of Debate, in offering for your consideration and discussion a paper on the subject announced in our programme, I recognize fully the fact that there are two sides to this subject. If I did not deem it a subject upon which we entertain different and very positive theoretical views by which we are guided in practice, I would not have considered it a fit subject to offer you for discussion. No doubt some of you will see the subject in a very different light from my own. I hope those gentlemen who do, and also those who agree with me, will not hesitate to express their views in the discussion which, I trust, will follow the reading of this paper. I am here to receive instruction as well as to give you the benefit of my own ideas. It may be that we will all modify our views by a frank exchange of opinion.

I am well aware that alcohol in some form has long been the stimulant mostly relied upon in the practice of medicine—that it is a generally accepted doctrine that alcohol is a stimulant to the digestion, a cardiac tonic, a conservator of tissue, capable of increasing and sustaining the vital energy, and therefore indispensable in the treatment of all low grades of disease, shock, collapse, etc. But there have been many accepted doctrines in the history of medicine that have proven to be fallacious. Many long-used remedies have been dropped and forgotten, their places being supplied by other and better agents.

I began the practice of medicine with the popular belief that in all low forms of disease alcohol was the all-safe, all-potent, and only stimulant to be used. Experience has taught me a different lesson, and the more experience I have, the stronger my convictions grow that this too general and too exces-

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*Read before the North Carolina Medical Society, May 15, 1895.

sive use of alcohol as a stimulant in practice is erroneous. With experience our ideas change. They will change. And "many pet theories which we to-day look upon as being the very foundation-stones upon which our noble profession rests will crumble to dust." Many of our cherished idols have fallen and humanity has always been the benefactor. I do not claim to be in advance, but only following the lead of others—only in harmony with the tendency of the medical profession of the day. With our improved therapeutics alcohol is justly losing ground as a medical agent. Strychnine, nitroglycerine, digitalis, caffeine and others are found to be more reliable, more powerful and less harmful agents. The more these remedies are used the more they grow in favor and the less is the necessity for the use of alcoholics.

For a long time alcohol has been, and even at the present time is, the only stimulant administered by the general practitioner. It appears to be the only stimulant at his command with which he is at all familiar. Notwithstanding its many pernicious effects in the human economy, if there be heart-failure he gives alcohol; in profound coma, alcohol; in chloroform narcosis, alcohol; in feeble digestion, alcohol; in flagging nerve-force, alcohol; in threatened exhaustion from post-partum hæmorrhage, alcohol; during the crisis in pneumonia, alcohol; in the exhaustion of typhoid fever, alcohol; in every critical condition, where the patient is vibrating between life and death, alcohol is his first and only thought. Not content with this reckless use of a bad agent, like the man who took his dram first to get ahead of the snake-bite, he must needs forestall all these expected evils by the early use of alcoholic stimulants in almost every case of sickness. I respectfully assert that this frequent and excessive use of alcohol in practice is not needed. Even where a stimulant is indicated, we have other more reliable stimulants that are free from any of the hurtful influences that alcoholics exert.

It is in typhoid fever that alcohol is, perhaps, most used; and for that reason it is here that it likewise does its greatest amount of harm. With our advanced knowledge of the specific nature of typhoid fever and of the use of specific remedies in combating it, few cases properly managed will need any stimulant whatever. It is claimed first, for alcohol in this disease, that it stimulates the function of digestion. I grant that a very small quantity, not more than one teaspoonful at a dose, may aid digestion. But this is far below the quantity usually employed in fevers, one-half to one ounce of whiskey or brandy every two or three hours being usually given. This quantity materially interferes with, or entirely arrests, the process of digestion by precipitating the pepsin, the natural ferment of the gastric juice. Strength can only be supported for any considerable length of time by food, and by this excessive use of alcohol we deprive the patient of this all-important support, without which he cannot long be sustained. But further, alcohol flushes the capillaries of the stomach just as it does those of the skin. Where there is already a smouldering congestion of the mucous coat of the stomach,

it takes but little to light up the fire of acute inflammation. The continued use of such quantities as are given in low fevers often produces this complication. Many patients that are making a feeble, yet hopeful, struggle for life, are thus deprived of natural food; and as they grow weaker and weaker, this mistaken conservator of strength is still pushed, in quantity and frequency, till the congestion and then gastritis are added to more severely tax the already failing vitality. If alcohol had no other hurtful effect, because of this alone it should never be given in such quantities as are prescribed in low fevers, such as typhoid. It was this interference with digestion and frequent production of gastritis that caused me to discard it in low fevers.

Its doubtful physiological action and harmful effects have only just begun when it has destroyed the power of digestion and produced a most serious complication in the form of gastritis. As evidence of its doubtful and even hurtful utility, I quote from Ringer's Therapeutics.

"The following rules," he says, "regarding the use of stimulants in fever were laid down by Dr. Armstrong, and will receive the assent of all practical men":

"1. If the tongue become more dry and baked, acoholic stimulants generally do harm; if it become moist, they do good.

"2. If the pulse become quicker, they do harm; if it become slower, they do good.

"3. If the skin become hot and parched, they do harm; if it become more comfortably moist, they do good.

"4. If the breathing become more hurried, they do harm; if it become more and more tranquil, they do good."

He says further: "These excellent rules might be supplemented by a fifth—Alcohol does good when it produces sleep and quiets delirium." On the other hand, as Bartholow says: "Does harm when it increases fever, exaggerates delirium and induces coma vigil."

Here we have a complete set of rules for our guidance laid down by our best medical authors. Was ever a set of rules more replete with uncertainty or more suggestive of harm? You are not assured of the certainty of any single physiological action. In every case you are just as liable to kill as to cure your patient, and in no case are you told which it is going to do till you have tried it Would you risk *your* life, or even your money, upon such doubtful security? Is it right to jeopardize the life of your patient with such an unreliable remedy, fraught with so many chances of peril? You can never know till you have tried it just what it is going to do—whether it is going to send your patient up or down. The time lost in the trial may be the turning point for the worse in his fate. We have all seen cases in which a day passed meant recovery or the contrary. In such extremities it is not safe to be experimenting with a doubtful stimulant. Or, worse yet, the downward impulse given by some untoward action of this uncertain agent,

when given on trial, often puts the patient beyond the hope of recovery. Even when the action is beneficial at one or more points, it is often doing irreparable mischief in some other equally vital parts. It may be stimulating the digestion, but it is also accelerating the heart's action, increasing the fever and greatly increasing the expenditure of vital energy, producing the very exhaustion that the doctor is endeavoring to guard against. If it is slowing the pulse and relaxing the arterial tension, it is also arresting digestion, producing congestion and inflammation of the mucous coat of the stomach. Hence, I say, if it is doing good at one point it is doing mischief, may be insidiously, at some other equally vital point. It is in these cases of low fevers that the doctor is called upon to make his hardest and best fight for the life of his patient. It is not good military tactics to go into the battle with only such doubtful weapons in his hands. He has to do battle with a foe that taxes and often defies every resource at his command—what folly to leave in doubt the action or potency of the ammunition! Why reduce the chances of success by having in your hands only an untrustworthy weapon!

But what should we do? The answer is simple and easy. Use specific remedies for specific purposes. When a food is needed use a food pure and simple. If the digestion must be aided, use dilute muriatic acid and pure scale pepsin, enough to peptonize the amount of food that should be given. If an antipyretic be needed, use the sponge, the bath or other antipyretic properly fortified; for alcohol short of lethal doses never reduces the temperature more than 0.4 or 0.6 of a degree. If the heart's action must be slowed and strengthened, use a heart tonic *per se*—use digitalis. If a powerful nerve stimulant be needed to spur the flagging energies, to maintain the heart's action, to sustain the respiration, to revitalize the failing senses, use strychnine. It will not fail you, will not cripple your prostrate patient in some unexpected way, will rescue him from the very "shadow of the valley of death" as no other remedy can do it.

One of the common and most dangerous uses of alcohol as a stimulant is during hæmorrhage. It is customary when hæmorrhage occurs, either by accident or in the process of disease, to administer whiskey or brandy under the false idea of supporting the vital powers. I desire to condemn this practice with all the emphasis in my power. In every form of hæmorrhage, where the bleeding has not been arrested as by ligature, alcohol only increases the danger by increasing the hæmorrhage. Alcohol relaxes the arterial tension and at the same time increases the force and frequency of the heart's action. It destroys the contractile power of the middle muscular coat of the arteries, preventing this natural means of arresting the flow from the several blood-vessels, and also by increasing the heart's action sends a greater and more rapidly flowing volume of blood to the severed vessels, thus washing out and preventing the formation of a clot, the most effective possible check upon the

flow. If a stimulant must be used, it should be one that increases the arterial tension at the same time that it increases the heart's action. The argument does not stop here. The action of alcohol being such as to contra-indicate its use where hæmorrhage already exists, the same physiological action maintains where hæmorrhage is likely to occur, and for the very same reasons it is contra-indicated there. This abuse is most common in typhoid fever where hæmorrhage from the bowels is a frequent and dangerous complication. When the arterial walls are weakened at certain points by ulceration, their contractile power lost, admitting of over-distention, the arterial resistance to the force of the heart's action lost, allowing the entire force of the volume of blood sent from the heart to be exerted upon the weakened points, rupture and hæmorrhage must of necessity be more liable to happen. Alcoholics being in such general use in typhoid fever, who can say how many cases of hæmorrhage may or may not be due to alcohol alone? We are certain of the fact that where hæmorrhage is liable to occur the use of alcohol increases that liability. The complication is such a grave one that the necessity for alcohol, and for alcohol alone, should be most urgent to justify its use. Since we have other stimulants that can perform all of its good offices without any of the bad, its use is all the more unwarranted. Such agents we have in digitalis and strychnine, which strengthen the heart-beats and at the same time increase the arterial tension.

The too general use of artificial stimulants in pulmonary diseases is abusive mainly because we have other better stimulants. It has perhaps done much good in this field, but its too general use is doubtful. In pulmonary phthisis, during all the long years that alcohol ranked among the best remedies, the mortality steadily kept up to 100 per cent. It is only since we have learned of other remedies that we hear of a percentage of cures. I can do no better here than to quote from Dr. T. J. Keys, Professor of Diseases of the Chest, Philadelphia Polyclinic, on the use of strychnine in these diseases. He says: "This drug gives better practical results in the treatment of pulmonary diseases than any other single remedy at our command. It has a more powerful stimulating influence over the nervous system than any other drug in the materia medica. Besides its general action it has a special influence on the nerve supply of the lungs, heart, stomach and intestines. It has also the faculty of multiplying the corpuscular elements of the blood. A combination of such properties makes it apparent why it should possess such beneficial therapeutic effect in the diseases under consideration. Bronchitis, whether acute or chronic, is much benefited by strychnia. It checks the cough, diminishes the expectoration, improves the appetite, puts to one side the whole constitutional relaxation and feebleness present, especially in the chronic form of the disease. It is one of the most useful agents in the treatment of acute pneumonia. I know of no disease more eminently benefited by strychnia than pulmonary consumption." This authority is so high and the facts

set forth so explicit, that no commentation on my part is needed. I only ask of you to try strychnine in the place of alcohol in all pulmonary diseases, and thus be convinced.

In shock alcohol is a valuable remedy, meeting well the indications. But for convenience of administration and in cases of profound shock, where whiskey or brandy could not be swallowed, strychnine hypodermically at once suggests itself. "Its action is analogous to electricity. It discharges its force into the system in a manner similar to electricity." "If shock be severe and collapse threatened, strychnine takes the first rank. It should be given in large doses, not less than $\frac{1}{20}$ grain, and repeated several times, at short intervals, if needed."

In chloroform narcosis due credit must again be given to alcohol. But I must earnestly advise against its use as a preventive of chloroform narcosis, where the anæsthesia is to be continued for a considerable time. The secondary action of alcohol is similar to the action of chloroform, and where the anæsthetic is to be continued for some time the secondary effect of the alcohol might come on and only deepen the chloroform narcosis. The dictum of Dr. Stephen Smith, an eminent surgeon—"Send your patient to the operating table drunk"—is certainly abusive use of alcohol, rife with danger and to be condemned. Even here strychnine, given hypodermically as a preventive or in the emergency, is more powerful, more convenient of administration and safer.

The same is true of strychnine in threatened collapse from any cause. It is the most powerful cardiac and respiratory stimulant. Being readily given hypodermatically, it acts promptly, and can be given when whiskey or brandy cannot be ingested. The more generally it becomes used, the more confidence we have in its use, and the wider its range of usefulness expands. In small doses it is a most valuable tonic in many atonic conditions. In larger doses it gently stimulates the flagging forces of nature when they threaten cessation of action, renewing and sustaining the vital energies in the most severe wasting diseases, in a manner more in harmony with nature than any other agent. In heroic doses, next to electricity, it is our most powerful vital incitant, invaluable in warding off and overcoming shock, collapse and chloroform narcosis. Like the electric flash, that kills at a single stroke, it is equally potent for good when used in proper limits. Just as the electric motor is destined to supplant the steam engine as a motor-power in the world of mechanics, strychnine will take the place of alcohol as a stimulant in the medical world—not entirely, not all at once, but none the less surely.

References:

(1) Bartholow, Materia Med.; (2) Ringer's Therapeutics; (3) Bartholow, Materia Med.; (4) Ringer's Therapeutics; (5) Col. and Clin. Record, Nov. 1893;) (6) Dosimet Med. Rev., Dec., 1894; (7) Geiger, Int. Journal Surg., Nov., 1894; (8) N. S. Davis, M.D., Brief, Nov., 1891; (9) The Asclepiad, Vol. viii., Nov. 29, 1891; (10) Editorial in Int. Jour. Surg., Nov., 1894.

DISCUSSION.

Dr. ———————— said that the stimulation of alcohol is indicated in hemorrhage of the viscera, hemorrhage of the lungs, etc. We give it in cases of pulmonary phthisis for several reasons—for a stimulant and for food. We can take a specimen and place it in alcohol and so preserve it. In the same way the alcohol in the veins helps the tissues from putrefaction. When the pulse is very weak, he knew of nothing that would act like whiskey, given at regular intervals.

Dr. Hill said that all remedies are abused, and that the true physician should use whatever he found to benefit his patient. Dr. Wood, in his work on materia medica and therapeutics, says that alcohol furnishes nutriment by promoting digestion and by oxidation counteracts tissue waste of the patient. He had practiced physics for some time in Missouri and there was a great deal of pneumonia and the people used alcohol in such cases "externally, internally and eternally." While there he used the whiskey treatment in connection with alcohol, but since coming to North Carolina he had treated altogether with whiskey in cases of pneumonia, and successfully. He believed that as long as he found alcohol useful to him he should use it.

Dr. Bahnson rose to express the thanks of the Society for the paper. He differed from the gentleman in many of his conclusions, though he gave due weight to the authorities cited. He had no doubt, as Dr. Hill had said, that alcohol had been a very good remedy and that it should not be discarded until we are sure of a better. In this connection he asked to relate an incident of his boyhood: He was in an audience listening to a temperance lecture, when the speaker said: "Show me the man who has reached the three-score-and-ten years who has used alcohol continuously," and paused. An old gentleman by him, who hadn't drawn a sober breath for years, rose up and said: "Eighty-five," and sat down. He intended that to illustrate the fact that circumstances alter cases—the physician must adapt his treatment to the necessity of the individual patient—no cast-iron rules can be laid down.

By the way, he said that he could recognize no difference between peripheral vessels in supplying the lungs and the external organs. It seemed to him that pulmonary vessels would be the better name for those designated. He regarded strychnine as a very good stimulant. He usually gave one-twentieth of a grain for a dose and thought that was nothing to shrink from.

Dr. Sikes expressed his co-operation with Dr. Kent in his ideas. It did not seem to him that the doctor had annihilated the use of alcohol altogether, but he did think with Dr. Kent that when one thing was found to act better than another that it should be used and the change made. Dr. Kent claimed that digitalis and strychnine do the work that has formerly been done by alcohol, and Dr. Sikes could only say that all they had to do was to try it.

He did not believe that any drug had been more abused in the use in pneumonia than alcohol. For himself he could treat it as well without alcohol as with it. In typhoid fever for some years he had almost entirely abandoned the use of alcohol, because he could get better results without it. You will be sure never to find a better remedy unless you try others. He believed that the time was rapidly coming when the use of alcohol will be reduced.

Dr. Faison thanked Dr. Kent, and said that he would be glad if there was not a drop of whiskey on the face of the earth. He had never relied upon whiskey in pneumonia. Dr. Kent had not mentioned one heart tonic which he considered very important; he had never seen a patient brought out more quickly than by a hypodermic injection of morphine. He rarely ever used alcohol in digestive troubles. As to strychnine, he heartily agreed with what Dr. Bahnson had said. He did not believe that any man had ever died for the want of whiskey, but he had seen many who died from the effect of it. He was glad that Dr. Kent was on the right road, and reiterated what he had stated before, that if he had the right and power he would put alcohol from off the earth.

Dr. Herring joined with Dr. Kent and Dr. Faison in their opinion concerning the use of alcohol. He never used it unless he did not know what else to do. At one time he gave a quart of whiskey to a young woman twenty-four years old, for weakness, and she got well, whether from the effect of the alcohol or in spite of it, he knew not. She was insane from the effect of a severe case of diphtheria when he saw her, and whiskey was given because he didn't know what else to give. A man who uses it dies a miserable death sometimes. He asked the young men to lay a veto down against wine, whiskey and brandy. He treated pneumonia without it entirely, but found the best effect from opium. He told of a case in which he gave opium instead of whiskey and put the patient to sleep, and, upon waking, he began to improve. He used morphine and quinine. Whiskey is destructive to the constitution of man.

Dr. Riddick was satisfied that whiskey was one of the most necessary stimulants in the world, and he frequently used it. He also favored the use of strychnine, always having good results.

Dr. Kent closed the discussion, saying that he had been much gratified by the discussion, as he had felt the importance of the selection of the subject for the discussion. During ten years of his practice he had relied solely upon alcohol as a stimulant, but had never had satisfactory results, and he had found in strychnine a valuable substitute. He used whiskey until he found it doing mischief, and then he would substitute strychnine. He now used strychnine almost entirely. He appealed to the members of the Society that they at least try strychnine and decide for themselves.

UNCONTROLLABLE VOMITING OF PREGNANCY.

By W. S. Anderson, M.D., Wilson, N. C.

Of all the afflictions of the human family, there is perhaps none so universal as nausea and vomiting, to some degree, during pregnancy. While some escape, and even enjoy better health than at any other time, a large majority suffer more or less.

My object in presenting this paper, Mr. President and gentlemen of the Society, is not so much to advance some new theory or new remedy for this dreadful malady, but to call attention to and emphasize some of the old ones, and, if possible, provoke discussion on the subject that may do us all good, For of all the diseases we as medical men are called upon to treat, I know of none which makes one feel more helpless than the uncontrollable vomiting of pregnancy. Day after day we persist in our treatment, going from one favorite remedy to another, only to meet with disappointment and utter failure. Time nor space will allow me to discuss this trouble in all of its different phases in detail, but I hope to touch on some of the most important points and impress upon us as guardians of the health and happiness of our patrons, the importance of our duty in the premises.

Then, what is the cause of sick stomach of pregnancy, and what is the best treatment for it, and how may we diagnose and treat it in the ordinary form, to prevent its becoming extraordinary and uncontrollable? Of course the first cause is pregnancy, which produces more or less organic and functional modification of the whole system, especially the nervous system.

Then there may be an erosion, a displacment, an inflammation of the uterine tissue or ovary, stricture or hyperæsthesia of the internal os, or a diseased ovum, and in addition to these causes which bear an intimate relation to pregnancy, vomiting due to some functional or organic trouble of the stomach. One or more of these causes may operate with the first cause, and if not checked bring on uncontrollable vomiting.

In this, as in every other disease we are called upon to treat, it is all-important that we make an early and a correct diagnosis, which at first thought would seem extremely easy, but Guiniot has rightly shown that it includes three very distinct factors:

1. The diagnosis of pregnancy.

2. The diagnosis of any lesion, malposition or inflammation of os, neck, ovum, womb or ovary.

3. The differential diagnosis between obstinate vomiting due to pregnancy or some one of the above enumerated causes, and that due to some other

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cause independent of gestation. A correct diagnosis, made early in the disease, before the second stage is reached, will in many cases enable us to cut short the disease. But if we fail to detect the exciting cause and apply the proper treatment early and the disease reaches well the second stage, the prognosis will almost surely be unfavorable. When we come to consider the treatment for this dreadful disease, we must remember that, so far as the pathological anatomy is concerned, the lesions in the stomach are negative or diverse in character. It is true that the muscles and adipose tissue have been found atrophied and the intestines decreased in size, with occasional softening and injection of the mucous membrane of the stomach; as to the muscles and fat, they would suffer the same from want of nourishment from any other cause, and the lesions found in the stomach are not sufficient of themselves to cause death; yet, if the vomiting is not checked, the woman will surely die. The multiplicity of remedies recommended by different writers only prove their small value and uncertain action. One of the mistakes we are most liable to make when first called to these cases is the prescribing of a general course of medicines and neglecting or putting off a thorough examination of the womb and its appendages. While the former is important and healthful in the treatment, the latter is more so. The unwillingness of most women to submit to an examination causes the practitioner to put off till later what ought to be attended to early in the disease. I wish to impress this upon every one who has not learned the importance of an early examination in these troubles, not to delay too long what ought to be done at once; for I believe in every case where the symptoms become obstinate after a round or so of the usual remedies have been given for the liver and stomach without benefit, a careful examination will reveal some inflammation of the womb or its appendages, malposition, a constricted neck, a diseased ovum or pressure upon some nerve which excites the reflex vomiting; for the vomiting must be in great part reflex, since the pathological anatomy does not, in a large majority of cases, indicate any organic trouble of the stomach, and one of the grandest proofs of this is that very often the symptoms will disappear suddenly. Then, in my judgment, the first thing to do is to find the exciting cause and remove it. If it is a malposition, replace and hold it in position with a tampon of cotton or wool until it can hold itself in position. If there is an erosion, cure it, and if there is stricture of the neck and internal os, dilate it either with the finger or steel dilator, being careful always not to go beyond the internal os. Upon careful examination, if erosions, inflammations of all kinds of the womb and its appendages, stricture of the neck and malpositions be excluded, our conclusions must be a diseased ovum, and abortion should be practiced as soon as all the above causes have been excluded if the symptoms persist; and right here is considered the nice point, as to when abortion should be brought on; certainly it should not be delayed till the life of the patient is endangered by the operation.

If the above is true, and the cause or causes be sought out and removed early, I doubt whether we would have any cases of uncontrollable vomiting of pregnancy. I have had two very bad cases within the past few years, both primiparas. The first one I did not see till the second stage was well advanced. The womb was well down in the pelvis to the left side, with the fundus craned to the right with some flexion at the neck. The attending physician informed me that he, with a medical friend, had dilated the os with no benefit. I at once suggested the tampon, to which he objected, and for three or four days we continued medication. At the end of this time, however, I was asked to take charge of the case. I at once put the woman in the knee-chest position and introduced a tampon of several pieces of cotton balled up, the first piece flat, wet with glycerine. She felt relieved and for one day seemed much better, but the womb was so heavy, and the vagina at that time was quite red and dotted with diphtheritic membrane, the tampon could not be put in sufficiently strong to hold it up. At this time she was very restless and weak. I gave her opiates and various other anodynes, but the application of electricity, one electrode to the womb and the other passed up and down the spine, gave her more relief than anything else. She complained of being very tired, and said the electricity rested her. But her strength by this time was well-nigh exhausted and death soon closed the scene.

My second case was last year. This case drifted along as they usually do, the symptoms gradually growing worse and putting off from time to time the first and all-important thing—a thorough examination of the womb, when at last she consented, I found an abundant glairy, tenacious discharge from the neck, which was inflamed and swollen, with considerable congestion of the vagina and right ovary tender. I cauterized the neck with the solid stick of nitrate of silver, and applied a tampon wet with boroglyceride and alum. The first application gave her some relief, and after the third the relief was so great she consented for me to go to Greensboro, where this Society was then in session.

She remained in a fair condition until a few days after my return, when all the symptoms returned, exaggerated, if possible. When the family wanted consultation, I continued the caustic applications and nourished her with predigested foods per rectum.

Dr. Whitehead was called in and endorsed the treatment, adding oxide of silver, which, I think, did some good; and from that time on she continued to improve, and at full term was delivered of a fine girl baby.

DISCUSSION.

Dr. McMullan was impressed with the fact that the doctor attributed the trouble to pregnancy. Of course all know that the vomiting of pregnancy is reflex in character. It is due to the sympathetic connection of the uterus

and stomach. His treatment was to cut off that connection, and that was the treatment he should prescribe. Under no circumstances would he suggest that an examination be made. The prescription is bromide of potassium or sodium, and as it is harmless in character, he did not hesitate to keep the patient under its influence. When the uterus becomes sufficiently enlarged the vomiting passes away. Of course, when that treatment fails, he would cast about for other causes and look for the cause the doctor has described. Bromide of potassium has given better results for him than any other remedy he had ever used.

Dr. Booth wanted to say a word in regard to medical treatment of vomiting in pregnancy. So far as he knew the causes of these obstetric troubles was the primiperal condition. As a rule in this day and time our girls are not properly developed. The uterus is not fully developed until impregnation takes place, and it has to attempt to develop with the effort at dilation. There is a hard surface that will not give way, and there is nothing the matter with the stomach. That is nonsense, the cause is reflex action. He uses oxalate of cerium. The old dose was two grains, but as a rule, two grains will not do any good. The old dispensary tells us not to give too much. He was called to a lady several months ago who had been sick for weeks. He prescribed five grains for her. The other doctor had been giving her two grains. She never had any nausea after that, and was out in a day or two.

The next case after that was a little red-headed woman, very nervous, and he tried the same drug. It did no good and he gave her forty grains of bromide of potash and twenty grains of chloral hydrate. In a day or two she was well.

In another case the bromide treatment would keep her quiet and comfortable for a while, and then it would return. On examining her he found the uterus jammed down against the posterior wall of the vagina, and lifted it up, and she had no more sick stomach. This thing is a reflex trouble and sometimes it can be stopped by cutting off the telegraphic connection, if there is not some trouble with the uterus. The thing is to find out where the trouble is and to try to relieve that trouble.

Dr. McDowell wanted to endorse what Dr. McMullan had said with reference to the use of potassium bromide. Frequent doses of bromide of potassium often accomplished the desired effect. In regard to digestive ferments, he did not suppose that any physician ever gave digestive ferments with any idea that there was especially a disease of the stomach, but all know that there is some length of time between the ingestion of food and the vomiting. It is not long enough for digestion to take place by the ordinary process, the digestive ferments having been given with the idea of assisting digestion so that a sufficient quantity of food may be absorbed before vomiting occurred, in order to keep up the nutrition of the patient until the period of nausea was passed. Ordinarily that passes about the close of the third month. With this end in view, he thought that the digestive ferments had done, and

still do, a great deal of good. It frequently occurs that the digestive fluid of the stomach is changed by the condition. It may need an assistant, and pepsin and pancreatic fluid may be used. Sometimes these do not help the matter. He had seen the vomiting begin on the first day and keep up till the day the child was born. Nutrition was kept up almost entirely by the use of digestive ferments, and she took enough nutrition to keep her in good condition throughout the period.

Dr. Hines said that the difficulty to him was getting anything to remain on the stomach. In one case, which lasted about a month, nearly everything that he prepared relieved the patient the first day and she was all right, but the next day it returned. One very remarkable case which he should report was a woman who had been bed-ridden for months. She had the most irritable stomach he had ever seen; she could not retain laudanum and starch. He did not make any vaginal examination, but thought his associate had. She could not take anything by stomach or rectum. The only thing she took in three weeks was a little tea. She was nourished by the external application of lard and was kept alive for three weeks with that treatment. She recovered from the nausea and had better health than she had had for years and went on to the full term without the least difficulty. He had never seen one die from vomiting in pregnancy. It is a local disease and requires local treatment. He should insist on an examination, and should treat the disease locally.

Dr. Haigh knew of no more disappointing case that comes to the charge of physicians, and none that gives more trouble, and where they are more in the dark with regard to the exact treatment of the case, than this trouble of vomiting in pregnancy—there are so many points to be looked at. There is particularly one which is to be guarded against, and it is so difficult to tell when you have arrived at that point, that it keeps you under a constant strain when you feel that the life of the patient is gradually ebbing away, and cannot see when exactly to step in and use the heroic treatment by putting an end to the pregnancy. The cause of this trouble undoubtedly lies in the condition and upon the influences exerted upon the nerves by this condition. The treatment must lie along that line that the doctor has said in cutting off this connection. Sometimes it can be done in one way, sometimes in another. If the system can ever be gotten under control, so that the local remedies can be used, little difficulty would be found in controlling the one by first giving a hypodermic of morphine. That will for a moment quiet the stomach. It will relax, to a certain extent, the os; it will render less irritable the rectum, so that chloral can be used by enema, and that was one of the best remedies that he had ever used in such cases. He gave an enema of thirty grains of chloral and retained by pressure for a half hour, and it seemed to him to act more promptly than any remedy that he had ever used, except the dilatation of the os. But there are times when none of these

remedies act as it is expected, and the final resort is to emptying the uterus and relieving the system of the real cause of the trouble, which is the pregnancy, and that seemed to him the great difficult point to determine, at what time to interfere and put an end at once to the whole cause of the trouble. He thought that often physicians wait too long and the patient is lost. So that he should advise the interference as soon as it is found that the remedies are not having the proper effect and the patient is gradually going down-hill. The womb should be emptied by dilatation. He attempted to use the cocaine and was very badly frightened. The first time he ever gave a dose of cocaine he gave $\frac{1}{10}$ of a grain and thought the patient was certainly gone. It It is a dangerous remedy to use in a case like that; he should not attempt it again.

Dr. Anderson had not expected to say all that could be said in a paper of ten minutes, but so far as he knew it covered the ground as to treatment of these troubles. Of course, all the remedies that are recommended should be used to assist in the digestive process. The nourishment of the patient has to be kept up as much as possible. In his case last summer the stomach became so irritable it would not take in anything, and he nourished her by beef peptinoid powder in the rectum and stopped putting anything in her stomach for two or three days. She said that in a half hour after she would take one of these injections she would feel like she had eaten a meal, and pretty soon after he began to make the caustic applications through the neck and she began to improve. Up to that time he had used everything he could think of and everything that the books and journals had ever said would do any good. He believed, as it seemed that all did, that the cause lay in the womb or about it, and that there is the place to go to permanently relieve the patient. And after these applications have been made and all remedies tried then, as Dr. Haigh had said, it is time to go to the ovum and take out the cause.

ANÆSTHESIA.

By J. G. Blount, M.D., Washington, N. C.

In this grand march of the surgical mind towards the ideal in all things pertaining to that branch, it behooves us all to look well to each feature that will contribute to the attainment of that ideal.

Seeing the advances made in asepsis and antisepsis and the incursions and invasions made with impunity upon the viscera that have heretofore been regarded as sacred and inviolable, my attention is directed to one of the elements that sometimes thwarts our object. While as yet no ideal has been attained to produce that "*profundo sopore*" spoken of by John Calvin in his Commentary on Genesis, yet we are here to-day to discuss the relative merits of the different agents and some of the means available to contribute to the safety in the administration of those agents. Before entering upon that discussion it is fitting and right that we review, briefly, the history of anæsthesia and its growth up to the present. To-day we are familiar with the origin of the term because of the discussions that have occurred recently in the medical journals. About the middle of the nineteenth century Morton, the Boston dentist, while in conversation with the lamented Holmes, was at a loss for a word to express the effect produced by the inhalation of the vapors of the newly found substances. To the quick and fertile mind of Holmes the word *æsthetic* occurred at once as being sensitive, and *anæsthetic*, as being insensitive, easily followed. Letheon was first suggested as the most fitting name for the youngster that was precocious enough to demand immediate baptism, but Morton chose rather etherization and anæsthesia, and these have been held up to the present hour.

In all ages since the origin of man, even before the creation of woman and

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man's downfall, we are taught the first principle of humanity—that of gentleness and relief of suffering. We find the great Creator first setting the example by causing a deep sleep to fall upon Adam, and it was in this lethargic condition that the first surgical operation was performed—that of the removal of the rib—and "he took one of his ribs and closed up the flesh thereof."

Seven hundred years B. C. we find this same divine attribute emanating from the heart of man and the "wine of the condemned" is spoken of by the prophet Amos. Rather than torment condemned criminals this wine, Indian hemp it may have been, was given them, and it was in this semi-benumbed condition that the confessions were extracted from them.

So, also, is it believed by all commentators that our Saviour on the Cross was offed this same wine, and so this divine attribute that was manifested by the All-wise one at his first infliction of physical suffering, has been manifested by that noblest of His works man, and we find our beloved profession to-day struggling, striving, diving into the depths of half-forgotten lore and spending miserable lives in the hidden recesses of musty laboratories still in pursuit of a more ideal method of affording this relief.

As early as the third century, more than fifteen hundred years ago, it is recorded of Hoa-tho, an ancient Chinese practitioner, that he administered hemp for the production of anæsthesia, and in his description of its effects he states that when the drug is swallowed "the mind is immediately filled by a delicious succession of pleasant ideas which banish all cares and produce a perfect indifference to pain," and that "after a certain number of days the patient finds himself re-established without having experienced the slightest pain during the operation."

Herodotus makes mention of burning hemp and that the Massagitæ and Scythians inhale the burning vapors and by them become intoxicated as the Greeks do by wine. So are we all familiar with the Nepenthe of Homer and the "Jove-descended Helen" so drugged the wine as to "free men from grief and from anger and cause oblivion of all ills.

And now, about the thirteenth century, Theodoric, in his Chirurgial, before entering the priesthood, gave most minutely the preparation of the "Spongia Somnifera," which foreshadowed more closely than anything before our present method of producing anæsthesia. A sponge was dipped into an aqueous extract of opium, hyoscyamus, mulberry, hemlock, mondragora, wood-ivy, seeds of dock and lettuce and water hemlock, and this placed in a brazen vessel and boiled away in it until the sponge consumed it all. Whenever needed, this sponge was placed in hot water for an hour and applied to the nostril of the patient to be anæsthetized. If there was difficulty in arousing the patient, another sponge dipped in vinegar or the juice of the root of foenugreek was applied to his nostrils. As late as 1534 we find this

"Spongia Somnifera" still in use and Paré speaks of it as "used formerly" by operators.

And was not the immortal Shakespeare conversant with all these methods, for we know well that the Friar administered to Juliet a potion that "each part deprived of supple government did stiff, and stark, and cold, appear like death."

In 1784 we find Dr. Wilson Moore, of London, attempting to diminish the pain of surgical operations by the application of compression to the principal nerves supplying the part. Malgaigne, the French surgeon, experimented along this same line, but its application was as painful as the operation and soon fell into disrepute. Later, in 1819, Mr. James Wardsup resorted to copious venesection to diminish the sensibility in painful operations, and thought it most suited to persons of a nervous, irritable temperament, and always carried it to the extent of syncope.

Even up to the time of Samuel Gross we find him using complete opium narcosis as a means of producing anæsthesia, and where the patient was sufficiently strong he combined with it a little tartar emetic that the patient might be all the more thoroughly relaxed and insensible. These shared the fate of their predecessors upon the introduction of more modern anæsthesia.

Having reviewed, briefly, the ancient and mediæval history of anæsthesia, and shown that it was first accomplished in the olden times by the divine command, and later by the inhalation of vapors driven off from the "spongia somnifera," drinking solutions of these same extracts, the drinking of narcotic potions, copious venesection, mechanical means and the like, we come down to the substances used to-day and the beginning of their life.

Eighteen hundred, the closing year of the eighteenth century, marked the beginning of the investigation along the line of modern anæsthesia. It was in this year that Sir Humphrey Davy, one of England's most celebrated chemists, while experimenting with nitrous oxide gas, became convinced of its anæsthetic properties. His deductions were early looked upon as chimerical, and his discovery passed into history without practical use being made of it. Dr. Wells. a dentist of Hartford, revived this, and, after due experimentation, on the 11th December, 1844, the first anæsthetic operation was performed, that of extraction of teeth, with Dr. Wells, the discoverer, as the patient. After this many teeth were extracted in rapid succession.

Enraptured, enthusiastic and confident over the success of his discovery, he made known its virtues to Drs. Heywood and Warren, of the Massachusetts General Hospital, and they were to extract teeth before their student body, with members of the class as patients. Unfortunately, however, the bag was removed too soon and the operations were painful. Wells was hissed from the amphitheater, and, with his keenly sensitive nature wounded to the core, he left Boston to give up, for a time, his profession with vexation and

disgust. This inhalant again sunk into obscurity and was only revived in 1863.

In 1796 ether was first used in England as an inhalant in certain lung diseases, and in 1805 was used in Boston for the same purpose. Notwithstanding these early uses of ether, we are not concerned with it for its anæsthetic effects until March 30, 1842, when Dr. Crawford W. Long, of Athens, Georgia, made use of it for allaying pain in surgery and observed that persons who had hurt themselves while under its influence felt no pain. Unfortunately, however, it remained for Dr. Wm. T. G. Morton, on the 30th of September, 1846, in Boston, to perform the first case of an anæsthetic operation under sulphuric ether, by means of which the surgeon's knife was made kind and surgery every afterwards robbed of its terrors. Of all the substances yet discovered for prolonged anæsthesia the safest by far is sulphuric ether.

It affects first the respiratory centre, and before the citadel of the vital fluid is devastated we have a warning of the approach of the death-dealing seer.

In the production of its anæsthetic effects we notice three stages, which are as follows:

1. Exilaration and excitement.
2. Narcosis.
3. Sensibilities and reflexes abolished.

There is noticed from its administration a hacking cough and feeling of strangulation from local irritation. After its absorption successively and progressively are the nervous functions affected. Cerebration and voluntary motion first yield to the subtle invader and subsequently sensibility and consciousness are no longer able to withstand its influence and the patient lies in a state of complete narcosis. Before this stage of complete narcosis there is a period of excitement, and it is at this time that the character of the individual is developed. The banker draws his checks and figures interest, the doctor vends his pills and various individuals reveal their hidden secrets.

Before complete insensibility there is a momentary anæsthesia called primary, and this is sometimes utilized for minor operations, though most authorities contend that operations during the primary anæsthesia shock more violently than where complete narcosis is induced. Ether is irritating to the air-passages and at the outset there should be allowed some admixture of atmospheric air so as not to frighten the patient, though later on it should be pushed to purity to prevent vomiting. Owing to this irritation of the bronchial mucous membrane pulmonary congestion and œdema may supervene, and hence it is best for a time to avoid exposure and to apply as much artificial heat as possible. Ether, too, lowers the temperature, and for this reason, as well, the above cautions should be rigidly adhered to. There are times now when choosing an anæsthetic we would not be led to select ether.

Where there is any renal disease, as evidenced by albumin or casts, ether would be contra-indicated and chloroform, that I aim to discuss later, would be employed. So, also, if there be much bronchial irritation or chronic pulmonary trouble, ether would not be our selection. If, on the contrary, the heart is weak and flabby, ether is indicated and chloroform to be avoided. The advisability of changing from ether to chloroform, or the reverse, during the operation, must be left to the individual judgment of the physician who has charge of its administration.

Chloroform is a later production than its co-partner ether. It was not discovered until 1832, and then almost simultaneously by Soubeiram, in France, Liebig, in Germany, and Samuel Guthrie, of Sackett's Harbor, New York, though it is to the latter that a generous profession has awarded the honor of its discovery. Notwithstanding its discovery in 1831 it was not made use of for anæsthetic purposes until Sir James Y. Simpson brought it to the attention of the profession on the 15th of November, 1847, at Edinburgh. Upon its inhalation, after a brief period of stimulation, it is depressing in its effects and in over-doses is a certain poison, acting by the destruction of the contractility of the heart-muscle.

John MacWilliams, of Aberdeen, has demonstrated that even when due admixture of atmospheric air has been allowed in its administration there is caused at times an acute dilation of the heart, and that this may even precede the loss of conjunctival reflex, affecting both sides of the heart, and often occurs before any fall of blood-pressure. Artificial respiration in these cases avails us nothing, for the dilated and enfeebled heart is no longer able to maintain the circulation. The dilation is produced, according to MacWilliams, by the direct poisonous effect of chloroform upon the heart-muscle. Up to the time of the report of the first Hyderabad Commission a large majority of clinical observers shared in the belief that chloroform destroyed life mainly through cardiac failure. After repeated experimentation upon the lower animals this Commission decided that the drug killed by its destructive action upon the respiration—a statement that provoked most violent oppostion. So violent, indeed, that a second Hyderabad Commission was formed under the auspices of the Nizam's government; this Commission, after a thorough re-investigation, arrived at practically the same conclusion, namely, that chloroform always arrested the respiration before the heart.

Hare and Thornton, under the auspices of this same Nizam's government, made a very elaborate report to the effect that chloroform practically always kills by failure of the respiration when administered by inhalation, "provided' (and this they regarded as the most important), "that the heart of the anæsthetized has not been rendered functionally incompetent by fright or violent struggle, or again by marked asphyxia. While they most positively assert that the drug destroys life by primarily causing failure of the respiration, it is also asserted by them with quite as much positiveness that in excessive

doses by inhalation chloroform has a depressant effect on the circulation, which is chiefly due "to centric vaso-motor depression with final depression of the cardiac muscle itself."

In the face of so great mass of contradictory experimental evidence, discordant laboratory results avail us, as general practitioners, nothing, and we should cultivate our own good judgment and study carefully each individual case. Chloroform, let me repeat, is unquestionably more dangerous than its co-partner ether, and yet were we able to find out directly the deaths produced secondarily by ether as from pulmonary congestion, œdema and the like, I feel very confident that we would not find such disparity in the statistics.

It is a fact that most of the recorded deaths from chloroform narcosis come from general practitioners, showing to my mind that it is principally to the inexperienced that this untoward result is apt to happen. Let us, then, study some of the methods to avoid this.

In the first place, its administration should not be left to the careless and inexperienced, but should be administered by the one who has had most experience with it and who will be wholly absorbed in its administration. Secondly, before the beginning of its administration we have certain agents that are useful. Of all the circulatory and respiratory stimulants atropia ranks first. It diminishes the secretions of the mouth, throat and bronchial mucous membranes and likewise the skin, and, according to Hare, allows the administration of more chloroform without depression. It is combined with morphine, so Wood states, as "a useful corrigent to the disturbing and irritating action of the latter upon the pneumogastric." All of these effects are desirable in the preparation of chloroform and ether anæsthesia as well.

In small doses morphine is a cardiac stimulant and aids largely in diminishing and preventing vomiting after ether. A happy combination, therefore, before anæsthesia is $\frac{1}{4}$ gr. morphia and $\frac{1}{60}$ gr. of atropia—they both lessen vomiting. Since both chloroform and ether lower temperature, external heat, such as water-bags, hot irons, etc., should be applied. The temperature of the room and its humidity should be taken into account. When high and dry, volatilization is more rapid and it is more diffusible, and anæsthesia and recovery therefrom more rapid.

Richardson claims that "fatal results follow upon the sudden impact of chloroform (an irritant vapor) upon the nervous periphery of the breathing surfaces." This fact points directly to the danger of rapid chloroformization. Richardson's formula, a most excellent one, is as follows: "Never induce slow narcosis through every stage, but, having carefully felt the way in the first minute or two, push quickly into the third stage, in which, if the body be not surcharged with chloroform, the danger is comparatively small." During the administration of all these subtle vapors we should ever be on our guard. We, as men endowed with reason, must not follow blindly the result of laboratory experiments upon parish dogs when they collide with

practical experience or physiological common-sense. The respiration should have all the consideration that is its due, but it would be the folly of follies, to use the words of Mr. Daily, the London anæsthetist, "to neglect the pulse, the pupil and color of the complexion."

The respiratory and cardiac centres are vital centres, and when the chloroform is pushed to the extent of interference with either the pulse or respiration, we are already confronted with one of the signs of dangerous overdosing. Again, both the pulse and the respiration can be affected not alone by the anæsthetic, but by the reflex inhibition, which is oftener the precursor of vomiting, and especially is the pulse irregular and depressed during vomiting. Of all the indications the pupil is the most important. The third nerve centre which governs it is not a vital centre like the respiratory and circulatory, and its narcosis is not in itself followed by dangerous symptoms. In all anæsthesias there are three changes that the pupil undergoes. At first dilated and active, then contracted, and finally dilated and fixed. The dilated and active pupil indicates that narcosis is incomplete, the contracted pupil is an indication of complete and safe narcosis, while the dilated and fixed pupil is the herald that comes to forewarn us that unless we desist and are less persistent the respiratory and cardiac centres are in danger of narcosis. The only safe pupil, then, is the contracted one. The pupillary changes are explained as follows: In the first stage the pupil is dilated because all the impulses received by the half-narcotized cerebrum cause a reflex inhibition of the third nerve centre, and active because the centre itself has not been anæsthetized. In the second stage the pupil is contracted because the cerebrum is completely anæsthetized, and all cerebral reflexes being cut off, the third nerve centre is unimpaired in its action. Further, the pupil is dilated and fixed because the centre itself has been reached and narcotized. This is indication of great danger, for respiratory and cardiac narcosis are imminent.

What I have said in regard to overcoming the dangers of chloroform is equally applicable to ether. Should we, in the production of anæsthesia, be confronted with dangerous toxic symptoms, what are we to do? Always we should have prepared a hypodermic of strychnine and digitalis, and this should be immediately inserted into the deltoid muscle. If there is present much cynosis, a pearl of nitrite of amyl should be broken in a handkerchief and applied to the nostril. The table should be inverted into an inclined plane, with the declination at the head. Posture in these cases, according to Hare, is all-important. I had the pleasure of being present to hear Dr. Hare's lecture at Johns Hopkins, with demonstration on the cadaver, of the method of opening the glottis. The tongue should be pulled outward and upward toward the upper incisors and the neck, instead of being lowered, as in Howard's method, should be elevated, else the tongue will obstruct the glottis, and the head should be extended The position is best described by

that one assumes when running. Sylvester's method was found to be by far the one allowing the greatest entrance of air, though the feet should be fixed and the body stretched. In the beginning the first movement should be an expiratory one, so as to rid the lung of that vapor-laden air that would otherwise continue to be absorbed.

Electricity, that has been so vaunted and highly lauded as an aid in restoration after imminent narcosis, is not so extensively used as formerly. According to Wood, if applied on the left side, there is great danger of electrolyzation of the pneumogastric, and thus inhibition of cardiac motility, and sometimes, when applied on the right side, there is danger of an overflow of current and with some inhibitory action resulting. The pouring of ether over the bared abdomen, intermittent pressure over the diaphraghm and the grasping of the heart through the relaxed chest wall and its intermittent compression are all in use to-day and have their advocates.

Methylene bichloride was first made known to the profession in 1867 by Dr. W. B. Richardson and since pronounced by Mr. Spencer Wells to be the safest anæsthetic. In more than a thousand cases with him it proved free from danger and without unpleasant symptoms. With nine fatal cases, however, recorded against it, it is to-day almost a thing of the past. Several years ago ethyl bromide came into very general use and at one time bade fair to supersede both chloroform and ether. Several lethel exits sufficed to drive it from the anæsthetic stage. Within the past year Dr. W. S. Magill, of Chicago, has again brought it to the attention of the profession and lauds it highly in inducing the first stage of anæsthesia and following it up with chloroform. In all sixteen fatal cases are on record against it. Its advantages, according to Magill, are—the rapidity, the elimination of the disagreeable phases of chloroform or ether which precede or retard recovery from these reagents and the diminished quantity of the toxic agent required—all these elements of superiority combine to invite the notice and experimentation of surgeons.

Of the new anæsthetics, the most recent that has been brought to the attention of the profession is pental, by Dr. P. F. Feoddroff. It is not irritating to the mucous membrane, and its duration is from one to two minutes, though once induced it may be prolonged from two to five minutes. In very many cases the radial pulse is not affected, though especially at the beginning should we be circumspect and cautious in its administration.

Analgesia is induced while consciousness is still retained, though, as with the other anæsthetics, prudence demands that we await complete anæsthesia. In ten or fifteen minutes after its first administration it may be used again with perfect safety.

In short, pental is well adapted to operations of short duration. None of these agents have gained a foothold on the American people.

Early in 1847, when the year was yet young, so enthusiastic was Sir James Y. Simpson, that it was his custom to go about singing:

"Not poppy, nor mandragora
Nor all the drowsy symphs of the world,
Shall ever medicine thee to that sweet sleep."

And so may we, in the closing decade of the nineteenth century, in no short time be able to say:

"Not chloroform, nor ether,
Nor all the subtle vapors of the world,
Shall ever medicine thee to that sweet sleep"—

a sleep to be produced by that ideal anæsthetic yet to be. Before that time, however, let us, one and all, as general practitioners, study most carefully the danger signals in the administration of chloroform and ether, and thus continue in pursuit and in perfecting, to use the words of Dr. Jacob Bigelow, "the most beneficent discovery which has blessed humanity since the primeval days of Paradise."

DISCUSSION.

Dr. Booth emphasized two points that should be attended to in resuscitating a person in chloroform or ether narcosis, namely, getting blood to the brain and artificial respiration. He cited two cases in which respiration and pulse had both ceased. In one, elevation of the feet and artificial respiration had worked excellently; but in the other case they failed; the reflexes were aroused, however, by dilatation of the sphincter ani.

HEMORRHAGIC FEVER—SOME EXPERIENCE WITH IT.

By P. B. Loftin, M.D., Grifton, N. C.

"Boil down," printed on the card notice from our Secretary, attracted my attention when I received notice of this meeting with a request that I send in the title if I expected to read a paper.

I assure you, Mr. President and gentlemen, it would more than please me could I think a volume, write a page and convey my experience with this dread monster to the minds of this body by publishing of that page but a single line; but such is not the case, and my hopes along this line would be blighted were I to expect it.

From the headlines of this paper you would naturally suppose that the writer had encountered some hemorrhagic fever in his practice, and so he has. It was so prevalent in our town and surrounding country from September 1st, 1894, to the last of February, 1895, that it was really alarming.

Do you ask what hemorrhagic fever is? I cannot define it satisfactorily tô myself. I do not think it an acute affection, though when we diagnose the malady under the above name it usually runs its course in a short while, and your patient is convalescent; or, on wings of a golden hue, his spirit soars to untried regions.

I must think that it should be placed with chronic diseases, because I am satisfied that hemorrhagic fever is developed from chronic malaria, because the history is ever thus: Patient—I have been having chills occasionally for months, about one every week; would take some quinine and stop them; would take a little quinine every day for two or three days, then stop.

So it would go for months; patient become ænemic, with a history of a broken-down constitution. Suddenly, when the patient is least expecting it, when he feels as well, perhaps, as at any time for months, he urinates, and behold, it is the color of cherry wine. When once seen it will never be mistaken if preceded by chills, as above stated.

I am fully satisfied that hemorrhagic fever is caused by an over-production of the malarial germ. How is this germ taken into the system? Answer: With drinking-water. This I have proved, beyond the shadow of a doubt, to my mind. I have, for several years, been pleading with my people to get a better supply of drinking-water, but every family think they have the purest water in the county; though they drink daily from the drainage of a cess-pool, they get used to it, and it tastes all right. I tell you it is a job to make any one think the water he drinks is not all right—about as difficult as it is to make a dude think he could do without his cane and cigarette.

Last fall, when that terrible scourge came on, most of our people began boiling their water, and whenever this is strictly adhered to, the chills always

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disappear. I cannot dwell along this line, but am glad to see so much is being written and done to get the people to drink pure water. In fact, I sometimes think myself to be fanatical on this subject.

> "Pure water, fresh from the fountain, we think,
> Is nectar such as the gods used for drink;
> And when the people, as beverage, this elixir will use,
> Health to the nation Hygea'll not refuse."

When treat hemorrhagic fever? Before you have it. Prophylaxis. Don't have it; but, if you must encounter it, *then treat it at once.* Ask, as a special favor of your patients, if they intend to send for you in this disease to do it at once, and implore them, if they are going to wait twelve or fifteen hours to send, that they consign their bodies to the dust and their spirits to the God who gave them, without compelling you to add another lost patient to your already too long list—for it surely will be long, if you have many patients who wait for the sick stomach to come on before treatment.

It seems that Providence has provided a few hours, in all cases, to elapse between the first hemorrhage (which is generally through the urinary passage) and the time the sick stomach comes on, in which to treat your patient. My experience has been that, if these golden moments are lost and the patient receives no treatment until sick stomach comes, with the exception of a few cases in children, you had as well inform your patient's family that you can hold out to them no star of hope. It is always best in any case to be careful how you make a prognosis. I would say, in passing, that my experience has proven the disease is not so hard to control in children under twelve years of age.

Treatment.—After your patient has had a hemorrhage and you are sure you have a case of hemorrhagic fever, the first thing give sulph. quinine without much limit, say gr. lxxx., then gr. xx. every half hour until, say cl. or cc. grs. are reached, then gr. x. every hour until sick stomach comes on.

You may say that you cannot get your patient to take it, but when they find they have "yellow chill," as the laity know the disease, and you tell them this is the only remedy, they will swallow capsules like a chicken eating corn.

If your patient becomes blind, slack up on quinine and tell him his sight will return. My experience is that blindness may be expected in some cases, but sight always returns, and it is better to be blind a few days than to have the windows to the soul closed forever.

I give also, in the beginning, a saturated solution of nit. pot., teaspoonful in boiled water every two hours until perspiration sets in, then some four times each day. I stop patient from drinking any water except such as has been boiled. I allow no solid food of any kind given, all spirituous liquors are withheld and no internal stimulant allowed.

I never give calomel until sick stomach comes on, then I give it in $\frac{1}{4}$ gr. doses, combined with pepsin, every half hour, until six or eight powders are given.

I keep bowels open with some agreeable laxative. I do not give ergot to check hemorrhage—it has not, I think, proven best for me. I have patient well nursed and limbs occasionally rubbed during the first thirty-six hours. I give turpentine after hemorrhage stops. If temperature goes above 103°, I bathe my patient in water, say 80° F. I never use any of the coal-tar preparations. My experience with them is that they weaken, and I find cold water not only reduces the fever, but tones up my patients, and they soon learn to love it, though, at first, they may fear it. Then, in short, I treat whatever symptoms I find.

I feel sure that no one can lay down a prescribed course of treatment in every case. It has been my experience, without an exception as yet, that when I have seen my patient within five hours after the hemorrhage, I have not lost a case. On the other hand, when it has been fifteen hours from time of first hemorrhage to time treatment began, I have not saved a case except in a few children under ten years.

So, gentlemen, ever bear in mind,
If success you would find,
Hemorrhagic fever treat in time,
Or soon you'll hear the funeral 'hyme."

My excuse for offering this paper is that I have long looked in vain for something satisfactory on this subject. If anything I have said has given any brother practitioner one ray of light (should he have to encounter what I have had to for the past six months), then I feel that I am well paid for the time spent on this paper.

DISCUSSION.

Dr. Frank Duffy felt a great deal of diffidence in saying anything about hemorrhagic malarial fever. He was obliged to Dr. Loftin for discussing the subject, but differed from him in some points in the paper. Dr. Loftin said that in all cases hemorrhagic fever has followed chronic malarial fever. It is true that it is chronic in most cases; but from his experience and from that of his brother, Dr. Charles Duffy, who works with him in the same office, he would say that there are cases that do not come on in that way, but that the first manifestation of which is hemorrhagic malarial fever.

He considered the use of quinine the most important point to be discussed. He and his brother had used quinine, as everybody else, in the beginning of the treatment of that fever, and have about reached the conclusion to use none, and certainly if any, very little. He had known some instances where chills were followed by hemorrhagic fever, treated in methods which he would

presently attempt to indicate, and then followed by quinine, and that the hemorrhages followed the use of quinine. Quinine was discontinued and other treatment used and the hemorrhage disappeared, and quinine again administered and the hemorrhage returned—sufficient to make them believe that there was a causative relation between the quinine and the hemorrhage.

He thought it highly important that the patient be treated at once. He had seen one fatal case this season which did not seem to have had any malarial chills preceding it. Another physician had been attending this patient living some eight or ten miles from New Berne. The diagnosis was pneumonia, which he thought correct from some indications. He was called in a few days later and found that hemorrhage had occurred from the kidneys and that the patient was very far gone and he died in a few hours. That was the only fatal case out of a half dozen they had treated during the year. He relies largely upon bicarbonate or citrate of potash. He himself used lemon juice frequently; sometimes with potash, so as to get an effervescing draught delightful to the patient. Except in the beginning of the disease the temperature is, in most cases, not above normal, perhaps sub-normal, and does not remotely suggest the use of an antipyretic.

As to the hemorrhage, it is a current belief, and is probably so in the majority of cases, that the red blood-globule does not appear in the urine. He had seen the red blood-globule by microscopic examination of it, and in some very malignant cases not only does the hemorrhage occur in sufficient quantities from the kidneys to show the red blood-globule, but even from the rectum under the skin, or from other surfaces of the body, showing somewhat the appearance of purpuric hemorrhage. A remedy which he had used with considerable advantage, and which his brother had followed him in the use of, is hydrastis. It is an unpleasant remedy to the taste. He had used the fluid extract containing the two active principles of the drug. There is the colorless hydrastis, which he did not believe equal to the colored. The stomach will not always retain that—very frequently will retain nothing. He had seen nothing to equal the hypodermic injection of morphine to stop nausea, but the smallest hypodermic injections of morphine may be tried. He certainly would not give more than a quarter of what he would give in ordinary cases; and usually the patient would retain the hydrastis, potash, lemon juice or combination. His friend, Dr. Attmore, who practices in Pamlico county, had probably had more cases of that kind than any one else, and he used a great deal of spirits of turpentine with very favorable results.

Dr. Booth was very glad that he had never had a case of hemorrhagic fever in his life. It was his good fortune to be about a week in the company of Dr. McIntosh, a very eminent man, who has had a great deal of experience in hemorrhagic fever. He has quit the use of quinine and uses digitalis alone and gives very large doses, thirty grains, three or four or six hours

Dr. N. H. Street, Newbern: My experience with the type of fever called hemorrhagic has been limited to eight or ten cases, and consequently I can only theorize as to its etiology and pathology.

I believe it to be a low form of fever—pernicious malarial, paludal or swamp fever of a more or less congestive variety, whose external manifestations are very similar to yellow fever.

I have met with two varieties which, for lack of a better differentiation, may be termed primary and secondary. The primary cases are those which come on suddenly, without the pre-existence of any other disease. The symptoms usually are as follows: Chill, fever more or less pronounced, constipation, sick stomach, jaundice—the system seeming to be thoroughly saturated with bile, usually within twenty-four hours blood appears, first in the urine, but may occur in any part of the body, from the simplest purpuric spot to the most violent hemorrhage from stomach, nose, bowel and bladder. With these symptoms usually in fatal cases, and these cases are nearly always fatal, there is added the horrors of uræmia, there being in some cases entire suppression of urine, with convulsions and coma. Instead of suppression, however, the kidneys sometimes seem to take on an undue amount of activity; but this is deceptive, for an examination of the liquid secreted will show it to be composed of crenated red blood-corpuscles, serum and other liquid elements of the blood, while the urea, urates and other normal constituents of the urine are sadly deficient, and hence may be explained the symptoms of uræmia in cases in which there *appears* to be sufficient urinary secretions. These cases die with uræmia, but what produces the uræmia is not clear. The strong and robust persons seem to succumb to the disease quicker than more delicate ones. The temperature is variable, usually high in the beginning, but falling by lysis or crisis until it frequently reaches the sub-normal degree of 96°.

The secondary are those cases which follow malarial diseases and which have been so well described by Dr. Loftin. These cases have seemed to me to be simply malarial hæmaturia and generally responded to treatment—few of this class die, whether you give quinine or not.

I wish to call attention to a case which I saw last fall, and which I am certain was a case of hæmorrhagic fever, so-called, without any hemorrhage at all. There were all the symptoms of the fever which I described under the head of primary, the patient dying within three days from uræmia, with suppression of urine. Careful examination failed to show any extravsation of blood, not even a purpuric spot being visible.

If the patient had lived I probably would have thought that it was a case of catarrh of the bile duct, but displaying, as she did, all the typical symptoms of the disease, and with such characteristic fatal termination, I am sure that the case was one of this type.

She was thirty-four years old, the mother of three children and had always

enjoyed the best of health. I would like to know if any of the members have met with similar cases; if not, I hope they will keep a look out and closely study the next case of pronounced jaundice they have which exhibits any of the symptoms of the disease.

As to prognosis, my experience is that the severe cases die in spite of treatment, while the milder forms get well, whether treated or not.

As to treatment, I have found no remedy which I could recommend. Turpentine, digitalis, potassium nitrate, citrate and other eliminants and stimulants are the ones principally used. I have had no better success with hydrastis than with any other drug, while quinine I have long ago discarded as being of no benefit; however, I must confess that I have never used such heroic doses as Dr. Loftin prescribes, and possibly that may account for my lack of faith in the old antimalarial standby in this disease.

Dr. Loftin did not wish to differ from Dr. Duffy, but if he were to go to a patient, no matter what kind of a hemorrhage he had, and he was to say that it had not been preceded by any malaria or any chill, he would not diagnose it as hemorrhagic fever. He believed that quinine in the hands of the laity has done more harm than good. The hemorrhage never makes him uneasy. He said let them have it; they generally stop in about twenty-four hours. He used quinine without limit. The first case he had was a little nephew of his. He found him one night in profuse hemorrhages, and in twenty-four hours he gave him two hundred and forty grains of quinine and nitrate of potash. When the boy recovered he said that he had not felt the amount of quinine given him half as much as he did twenty grains when given to him for other troubles. The poison of this trouble seems to consume the quinine, and in consuming the quinine the quinine aborts or stops the poison. He never gives less than thirty grains in a grown person, because he thought it did more harm than good. It seems to poison the red blood-corpuscles and causes people to be anæmic. He believed that the indiscriminate use of quinine had had something to do with hemorrhagic fever, because he thought it weakened the person given as the laity give it.

Dr. Duffy said that it was a rule that hemorrhagic fever is preceded by chronic cases of malaria, but he thought there are exceptions—that he would not exclude that diagnosis simply because there was no marked history of chills.

THE ANATOMY OF OBLIQUE INGUINAL HERNIA IN THE MALE WITH REFERENCE TO MACEWEN'S OPERATION.

By Richard H. Whitehead, M.D., Chapel Hill, N. C.

In accepting the kind invitation of the Chairman of this Section to write a paper upon the subject of The Anatomy of Oblique Inguinal Hernia with Reference to Macewen's Operation for radical cure, I expected to have the pleasure of demonstrating some dissections of the parts concerned. I very much regret that I have been disappointed in that hope, and shall have to content myself with a short verbal description.

In order that the testicles shall have the best possible blood supply, their arteries are derived from the abdominal aorta. The course of the spermatic vessels, from their origin to their destination, furnishes one of the most interesting objects of study in the anatomy of that "wonderfully made" creature, man. Passing down from the aorta behind the peritoneum the spermatic vessels come into relation on each side with the external iliac artery, which they cross from without inward, but so obliquely as to lie on the front of that artery throughout most of its extent. They are next confronted by the transversalis fascia, but just above and internal to the point where this artery changes its name to femoral there exists an opening in this fascia, the internal abdominal ring, so-called, and through this ring the spermatic vessels, joined by the vas deferens, pass, these structures being held together by a tubular prolongation of fascia from the margins of the ring, and together constituting the spermatic cord. The next two elements of the abdominal wall, the transversalis and internal oblique muscles, obligingly make way for the cord by arching above it. In this situation the fibres of the two muscles are conjoined and arise together from the outer half of Poupart's ligament, arch upward and inward, forming the "conjoined arch," and then, becoming tendinous, turn downward and inward, to be inserted under the name of the "conjoined tendon" into the crest of the pubes and the adjacent portion of the pectineal line. There now remains between the cord and its destination in the scrotum only the aponeurosis of the external oblique muscle, and here it finds another opening—the external abdominal ring. Note that this opening is not found just in front of the internal ring, but about an inch and a half nearer the median line, with its base at the crest of the pubes, and therefore internal to the spine of that bone. Thus between the two rings the cord lies in a canal which is just above, and parallel with, Poupart's ligament, about an inch and a half long, with the aponeurosis of the external oblique for its external wall, its posterior being furnished externally by the

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conjoined tendon and internally by the transversalis fascia, which is here quite thin. Crossing the back of the canal between the transversalis fascia and the peritoneum is the epigastric artery, on its way to form the great anastomosis between the subclavian and the external iliac arteries.

Thus the route for the descending testes and their blood-supply is accomplished, but with the result that a weak spot is left in the abdominal wall, through which a discontented gut may escape. To obviate this defect, nature makes the canal oblique, so that any increase of abdominal pressure pushes the posterior wall against the anterior wall of the canal, thus effecting a valve-like mechanism, which, in the majority of mankind, works in as atisfactory manner, very much in the same way that the ureter opens into the bladder.

Now, when rupture occurs, the normal anatomy of the inguinal region is materially changed—first the peritoneum, which normally covers the abdominal face of the internal ring, is pushed on down the canal by the descending bowel or omentum, and thus the hernial sac is formed; next the internal ring is gradually stretched and dilated, and finally dragged downward and inward, until it lies almost behind the external ring, thus destroying the valvular mechanism of the canal.

An operation, then, directed towards a radical cure of hernia, should aim at retrenching the size of the internal ring and at restoring the normal valve-like mechanism of the canal. Macewen claims that his operation fills both of these indications.

The important question of what disposition shall be made of the sac, is solved by him in a very ingenious way. If the sac be left in the canal, he says, it will act as a plug, and plugs dilate instead of obliterating the canal. If the sac be ligated and removed, there will still be left a puckering at the internal ring, which will probably be gradually dilated by the bowel, and thus the hernia be reproduced. Accordingly, having freed the sac, both in the canal and for about half an inch around the circumference of the ring, he introduces into it a purse-string suture, so that the sac will be thrown up into folds when the suture is tightened. The whole sac is then returned through the ring into the abdominal cavity, and the purse-string, having been tightened, is stitched into position against the abdominal surface of the ring, where it forms a convex pad, protects the ring and "sheds the intestinal waves back away from the opening." Then, by double stitches passed through the inner margin of the ring and of the conjoined tendon on the inside, and Poupart's ligament and conjoined arch on the outside, he diminishes the size of the internal ring and pulls it outward, thus restoring the normal valvular function of the canal.

DEMONSTRATION OF A NEW METHOD OF APPLYING PLASTER OF PARIS IN THE TREATMENT OF FRACTURES.

By Herbert A. Royster, A.B., M.D., Resident Physician, Mercy Hospital, Pittsburgh.

In response to an invitation from the Chairman of the Surgical Section, I desire to bring to your attention a recently devised method of applying the plaster of Paris splint in the treatment of fractures. This method was original in its conception and in its practical details with Dr. J. J. Buchanan, of Pittsburgh, Pennsylvania, from whom I first learned it and to whom I am indebted for the privilege of this demonstration. The value of this splint is well-recognized by those who have had occasion to test its efficiency in the large surgical service at Mercy Hospital, where it has been exclusively employed for the past year and a half.

Its mode of application is thus described by Dr. Buchanan: "The material required is the ordinary crinoline bandage, into whose meshes plaster of Paris has been well rubbed. The method of application is extremely simple. . . . The length of the splint desired should be marked on a table. The width, also, should be laid off, taking the full semi-circumference at the widest and narrowest points as a measure. . . . The proper size having been marked off on the table, the plaster bandage, soaked and squeezed, but still dripping, is unrolled and made to traverse the figure laid off, from end to end, covering the entire surface with from four to eight layers of crinoline, according to the strength required. A piece of muslin or Canton flannel is then applied to the upper surface of the plaster and the splint turned over so that the flannel lies next to the table. The edges of the flannel are trimmed, leaving a margin of half or three-quarters of an inch beyond the border of the plaster on every side. This border is then turned down and used as a binding for the splint, which is ready for application to the bare limb, the

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flannel surface next the skin. The limb is elevated and held in the position which it is desired to retain, the plastic splint moulded accurately to it . . and fixed in place by circular turns of a plain muslin or gauze bandage. The limb is lowered and held in proper position on a pillow for a few minutes till the plaster 'sets.' With good plaster this occurs in fifteen to thirty minutes. This splint can be easily removed by cutting the circular turns of the plain gauze bandage, should the limb swell or shrink. The application of a fresh circular bandage renders the splint as firm as before."

The advantages of this splint over the more common way of applying plaster of Paris are readily perceived and may thus be enumerated:

(1) Its removable character.

(2) Its adjustability.

(3) The cleanliness of application.

(4) Its safeness as regards circular constriction.

(5) The facility and thoroughness with which antiseptic treatment can be carried out with it.

(6) The non-necessity of interposing any protective between skin and splint. (Buchanan.)

My individual experience in the use of this splint includes 37 cases, and my personal observation extends over a still larger number. Simple and compound fractures of the leg constituted by far the largest class in the list; in the latter variety the splint proved to be particularly valuable. The skin-opening, if a compound fracture of the leg, being generally, as is well-known, on the anterior surface, since it is here that the tibia lies subcutaneously, the wound, after having been thoroughly disinfected, may be dressed with perfect antiseptic precautions, the plastic splint applied to the posterior half of the limb, and subsequent change in the dressing be made without disturbing the relation of the fragments in the slightest degree. Its superiority over the fracture-box in this instance consists in its greater cleanliness and closer apposition of the fragments. Indeed, it has been frequently seen that this apposition is too perfect, not giving that limited freedom which sometimes materially aids union. This latter point is still under consideration.

REPORT OF A CASE OF INTESTINAL PERFORATION.

By R. H. Whitehead, M.D., Chapel Hill, N. C.

The case which I am about to report to you is so different from anything that I have ever seen in my practice, that I have thought it not unworthy of being recorded. Moreover, I do not feel certain as to its nature, and shall welcome expressions of your opinion on that subject.

The patient was a young man, about 18 yaars old, who entered the University last September. He gave a history of severe suffering from dyspepsia during the past summer, and had found it necessary to live almost solely on milk and crackers much of that time. He had recently improved, and, being a very ambitious fellow, had insisted upon entering the University. He stated that he had almost constant pain in the abdomen. This pain was often severe and was not limited to any particular part of the abdomen, which was flat and not tender to pressure. He had no diarrhœa, and was positive that he had passed no blood, mucus or pus from the bowels.

There was no objective symptom that I could detect except anæmia, which was striking.

He was so anxious to pursue his studies that I consented to his entering college on the conditions of light study and withdrawal in case he did not improve. He did improve, to some extent, for about a month, when he was suddenly taken sick with what seemed to be an attack of cholera morbus. These symptoms rapidly passed away, and on the following day I permitted him to sit up. A few hours after leaving his bed he was seized with violent pain in the epigastric region, tympanitis rapidly developed to such an extent as to obscure the liver dulness, and the temperature rose to 103° F. He lived five days, and died with all the symptoms of severe septic peritonitis.

I had suspected a perforation of the appendix, or, perhaps, of the duodenum; so that I was much astonished when I opened the abdomen post-mortem to find, not one, but a great many perforations of the small intestine extending from the duodenum to the colon. The appendix was apparently not diseased. The perforations varied in size from that of a pin-head to that of a garden pea. Some were situated on indurated bases, others had ragged, gangrenous margins. In several places the wall of the intestine was much thickened, hard and contracted, as if by cicatricial tissue. The mesenteric glands were somewhat enlarged. There were a few soft recent adhesions. The abdomen contained no pus, but its entire contents presented that livid hue which we see in the worst cases of septic peritonitis. I regret to say that no microscopical or bacteriological examination was made.

This is certainly not the usual history of any of the forms of intestinal perforation with which I am acquainted. The supposition which best explains the case to my mind is this: that the patient had chronic intestinal tuberculosis, as evidenced by the indurated bases of some of the ulcers and the cicatricial remains of others, that from some cause or another an acute inflammation was lighted up, leading to perforation of one or more of the ulcers, thus causing a septic peritonitis, which, in its turn, may have produced the perforations which had thin gangrenous margins.

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THE CARE OF THE INSANE AND THE TREATMENT AND PROGNOSIS OF INSANITY.

By P. L. Murphy, M.D., Superintendent of the North Carolina Hospital, Morganton, N. C.

The subjects mentioned as the title of this paper can only be briefly dwelt on in the time allowed. They will be dealt with in a general way, and in such a manner, it is hoped, that will be interesting, if not instructive, to the general practitioner. The subjects will be treated separately, as far as possible.

All civilized States or communities make some kind of provision for the care of their insane, usually in hospitals and asylums. These terms mean in America very much the same thing, the tendency being to use hospital in preference, for the reason that insanity is now universally believed to be a disease, and is to be treated by physicians, whether by drugs or other means. The old, and at one time common, idea that an insane asylum was merely a place for the detention of persons who are dangerous or otherwise objectionable, to be at large, is fast giving way to the more modern belief that insanity requires, as other diseases, medical treatment.

The popular opinion that asylums are places of dark cells, of chains, of cruel and inhuman treatment, is slowly but surely giving way to the hospital idea, where the unfortunate inmates have the kindest attention and the best treatment. The former keeper is now an attendant, or, what is better, a nurse. Training schools for nurses are being established in most of the best hospitals; in short, everything is being done that can be to foster the idea that persons inflicted with the disease (insanity) ought to have, and do have, the most careful and skillful medical treatment.

Other modes for caring for the insane are in use, namely, private institutions, in colonies, the Scotch or boarding-out system, alms-houses and jails, or outside of an asylum, technically called "single treatment."

A mere mention of these different modes of caring for the insane, except the last, will be sufficient to answer the purposes of this paper.

Private institutions were established to care for a certain class of patients, principally the wealthy, who wish to have better or more expensive apartments than State institutions furnish, or who, for a variety of reasons, do not desire to mix with the class who are sent to public hospitals. They are almost universally under the care of physicians.

The colony of Gheel, which may be taken as the type of all other colonies, has been known since the 17th century. "The legend of St. Dymphna attracted lunatics to Gheel from time immemorial with a view to cure by

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miraculous agency. The lunatics who arrived in the colony were dependent on the church called in Flemish 'Zie ken kamer' (infirmary) and were present at the religious services which should deliver them from their malady through the intercession of the Virgin Mary. When the patients did not recover their reason after a lapse of nine weeks, they were often left with the inhabitants to wait for the next festival of St. Dymphna."

This custom seems to have been the origin of the system of family treatment which has continued at Gheel for several centuries. This system has undergone modifications since—the colony has been subjected to lunacy laws, principally the establishment of a hospital thirty-five or forty years ago. But long before this the lunatics were regarded as patients.

Persons who become greatly excited, or prove unmanageable in the families, or have grave inter-current maladies, are sent to the hospital.

The "boarding-out," or the Scotch system of caring for the insane was, as its name indicates, first established in Scotland. The Scotchman, with his usual thrift and yet humane spirit, undertook to care for the insane in a cheaper manner than in hospitals, which are so expensive to build. The law requires every lunatic to be sent to the proper asylum, unless his removal has been dispensed with by the General Board of Lunacy, who have charge of all these cases in Scotland. Such cases as, in the opinion of the Lunacy Board, do not require hospital treatment, are boarded out in private families. If any of these should become violent, or need hospital treatment, the Board orders his return to the hospital. The patients are visited four times a year (oftener in case of sickness) by the parochial medical officer and twice a year by an inspector of the poor.

This plan has been adopted by the Massachusetts law in 1885 and partially so by Wisconsin, perhaps at a later date. I know of no other State using this system.

Care for the insane in alms-houses is almost universally condemned, especially in such alms-houses as are common in our States. The system has nothing to recommend it except the lessened cost, which is conclusive evidence of improper care.

Jails are used for the temporary custody of dangerous lunatics awaiting proper commitment to the hospitals, which course, while objectionable, seems to be unavoidable in many instances. It is to our credit in North Carolina that nothing but necessity compels it. In the Western Hospital district I know of but one case confined in jail, and that is a criminal case.

Home care, or the treatment of single patients outside of an institution, is for the general practitioner the only practical point under this head of the subject. What cases should be treated at home, or outside of an asylum, is oftentimes a very perplexing question, and, it may be added, a very important one, for, rightly or wrongly, there is a stigma attached to a person who

has been an inmate of an asylum. That this odium is rapidly on the decline is true, but as long as such an opinion does exist, it is clearly our duty as physicians to save our patients from it if possible. It is, of course, proper to consider the damage likely to occur by such a step, and act accordingly. Young men and women often have their lives blighted and their future prospects injured by being sent to an asylum when they might have been restored by "single treatment."

Many young mothers break down in their first confinement and rapidly recover if properly treated. We will surely confer a great blessing on them if they can be relieved outside of an institution.

To properly arrive at the answer to the question, What cases can be treated as "single patients," I will first attempt to show those whom we cannot hope to care for at home—in other words, make our diagnosis by exclusion. It will be found that the number whom we are able to give "single treatment" is exceedingly limited.

In our own State one of the first difficulties that, in the vast majority of cases confronts us, is the want of sufficient money to give our patients such care and treatment as he needs, for we will find that single treatment means travelling, in some cases, with an attendant; and even at home the most assiduous watching by the physician and nurses. Few of our people are able to bear this expense, even if the patient has everything else in his favor for private treatment. It is plain that dangerous homicidal or suicidal persons need sequestration, that noisy and destructive ones—those disposed to burn, to steal or commit depredations of any kind, must be restrained. Acute mania, delirious melancholia and even melancholia of less acute form, does better when sent to an asylum; indeed, a cure is hardly to be expected outside of one. General paralytics, because of their tendency to steal and to squander their means, require sequestration.

Persons who have hallucinations of hearing are always dangerous. "The mystics, besides their practices of fasting, asceticism and self-inflicted violence, even to the extent of more or less serious mutilations, often attempt the lives of others in obedience to the sense of duty that inspires them. Those persons who believe they have received from heaven missions to destroy great or prominent persons, others with the view of pleasing God by sacrificing children in imitation of Abraham, still others who have delusions that they are persecuted, those suffering with subacute mania, with acute and subacute alcoholic insanity, those with delusions of grandeur, paranoiacs (primary delusional insanity), all these should be confined.

There are many patients whom we cannot pronounce dangerous, but who seem unable to exercise self-control enough to recover outside of an asylum. The following case will fully illustrate this class of cases: A short time ago a gentleman visited me with his medical adviser with a view to putting himself in the hospital. He was a shrewd business man, one who had accumu-

lated considerable property by thrift and enterprise. He bad formerly been in an asylum, where he remained a short time.

The only thing wrong with him was his extreme restlessness and a desire to drink and spend money foolishly. It was not very plain the gentleman was insane. We finally agreed that he would put himself under my treatment and remain in Morganton, and that I would furnish him a nurse. The patient, after various efforts to exercise self-control, finally told his physician that it was impossible for him to recover unless put under restraint, as he realized that he was insane and needed hospital treatment. And the patient was right.

There is still another class, it seems to me, that requires sequestration, and that is composed of young women whose minds are weak, either from disease or congenital defect, and who shows no dispostion to injure themselves or others. They are a menace to society by becoming the victims of the brutal lusts of vicious men and breeding illegitimate defectives, to say nothing of the mortification and disgrace to their families and friends.

Dr. E. Regis, in his work, "Practical Manual of Mental Medicine," says: "In every case of acute derangement, especially an attack of mania or melancholia, that is of a curable form, isolation should be practiced as early as possible, because it has been irrefutably demonstrated by experience and proven that insanity has not only ten times less chance of recovery at home than in a special establishment, but also that an attack of insanity not specially treated, but left to itself in an asylum, recovers more quickly than would the same case treated and watched outside of an institution."

After thinking over the matter and reading on this special subject, I find only a very few acute cases that can properly or safely receive "single treatment."

Acute primary dementia is a form of insanity which resembles nearly the popular idea of idiocy, and is not preceded by either mania or melancholia, the latter being called secondary or terminal dementia. Acute primary dementia in the young may be successfully and safely left at home, as nothing is required except the mere attending to the bodily functions. As already indicated, some forms of puerperal mania may be treated at home, and so mania transitoria and delirium tremens and a form of mania following epilepsy.

In addition to forms of insanity mentioned which are acute, there are some chronic cases who may remain at home. All of you know many such who are simply called eccentric or peculiar. They often do not require any medical attention. The family or friends being acquainted with their peculiarities, soon learn to manage them. After all, it is simply impossible to indicate further what forms may be treated without isolation. It must be left to the individual judgment of the physician in each case. In acute cases,

where there is no apparent danger in trying one at home for a while, a sufficient trial may be given before deciding to send to a hospital.

Treatment.—"In no other disease," says Maudsley, "are the difficulties of treatment so great as they are in mental disease, the intrinsic difficulties appertaining to the nature of obscure disease are increased and multiplied by the social prejudices concerning it; by the frequent concealments and misrepresentations on the part of friends who often may be reckoned on to mislead, rather than enlighten, the physician; by the necessity of removing the patient—probably against his will—from the care of his relations to other care more suited to his malady; by the unsatisfactory character and position of the institutions for the reception of insane persons; and, in some measure, also, by the necessary stringency of lunacy legislation. In the face of such difficulties one may sympathize with Casaubon when he says: "Let others admire witches and magicians as much as they will, who, by their art, can bring their lost precious things and jewels; I honor and admire a good physician much more who can, as God's instrument, by his knowledge of nature, bring a man to his right wits again when he has lost them."

The treatment of insanity naturally divides itself into general, which includes moral, hygienic, medicinal, etc., though in practice they are intimately connected.

Rest in bed as treatment has not until of recent years been so universally used. Of course, in cases weakened by disease, it was a necessity. I refer only to those cases physically able to be up. This treatment, as is sometimes the case, was first brought forcibly to my attention by what seemed to have been an accident. Just ten years ago a lady was committed to the State Hospital suffering with sub-acute mania, with an element of religious and sexual excitement mixed with the usual symptoms of the disease. She was restless and nervous, much broken in health and with poor appetite. She, in the course of time, began to expose her person when a man was in her presence. One day when she was making an exhibition of herself in this manner the nurse was instructed to put the patient in her room, meaning only until I had left the ward. I was called off that day and was gone for several weeks. The patient, in the meantime, having been kept in bed, I was surprised to find her on my return very much improved, better, in fact, than it was thought she would ever be. Since then I have found it useful in other forms, principally melancholia. This treatment has been long in vogue among neurologists, and I believe largely practiced in homeopathic hospitals, It is nearly always worthy of trial in these forms of insanity.

Occupation, Exercise and Amusement.—The first aphorism dinned into my ears as a rather lazy boy was, "An idle brain is the devil's work-shop." This is preëminenly true with the insane. No effort ought to be spared to encourage them to work, and, far better, to have some useful employment, if not useful, then employment of some kind. I have known patients to be

improved by giving them rags to tear, indeed, almost anything on which to expend their surplus energies except destructiveness. For the men there is nothing better than the ordinary labor on a farm. They may be usefully employed in the shops, at the barn, and, in fact, at any work they may fancy. I have established a special shop for them, where brooms, baskets, mattresses, etc., can be made. For the women, the usual household work, sewing, knitting, spinning, together with work in the laundry and kitchen, is used. I believe that perhaps their work might be enlarged by employment in the garden, the poultry yard and such other out-door work as they are accustomed to do at home.

Patients are induced to work by granting them certain privileges and appealing to their reason, but principally with us it is done by giving those who work tobacco. Failing to get patients to occupy themselves, they should take out-door exercise—at all events, to be in the open air. There are a class of persons, such as professional men unaccustomed to manual labor, who will not work; for them we try to find pleasant amusements, billiards, ten-pins and amateur theatricals. Dancing with us is more universally enjoyed than any other amusement. The object in all this is to get the patient's attention away from his morbid fancies and to divert his mind into healthy channels. Various other methods are used, but the object and results are the same, whether it by schools, by lectures, by stereopticon exhibitions, by corn-shuckings or what-not.

Seclusion and Mechanical Restraint.—It is sometimes necessary to seclude a refractory patient. All agree to this. Mechanical restraint is sometimes used to prevent injury to others, but of late years it is not used in many institutions except for surgical purposes and to prevent self-mutilation or suicide. The form of mechanical restraint usually employed is the camisole or strait-jacket. Tuke, in his Dictionary of Psychological Medicine, lays stress on what he calls "Appeals to reason." "It has been laid down," says he, "over and over again, that it is no use to argue an insane man out of his delusions." "As a general rule," he goes on to say, "this is no doubt true, but it may be too broadly stated and too invariably acted on." He holds, and he is right, that, while this rule may be applicable at one stage and be no longer useful at another, it is well not to agree with one in his delusion, and yet not too strenuously to deny it. It is a matter of judgment when it is wise to show the patient that he is laboring under a delusion. I believe it is a good rule never to directly admit to the patient that his delusions are true.

The hygienic treatment of insanity includes the usual sanitary regulations in regard to clothing, habitation, food, sleep, etc. There is nothing special in this. The patients should have a sufficient quantity of good, plain, well-prepared food, his clothing should be ample and free, his quarters well ventilated and clean. Untidy patients should be bathed in warm water as

often as they become soiled. The best bed for them is a cotton pad, under which should be a rubber or oiled sheet to protect the mattress. In a certain class of lunatics there is great danger of bed-sores. It is not always possible to prevent them, but care should be taken to bathe the parts likely to break down with alcohol or alum-water. Equal parts of castor-oil and balsam of copaiba is one of the best remedies with which to treat the sore.

Hypnotism has been tried in the treatment of insanity, but so far with negative results. Suggestions during the waking state I have occasionally found useful. For a long time I used it only to prevent one patient making an assault on another; but of late I have used it to prevent other insane acts with some good results.

Medicinal Treatment.—"The special medicinal treatment of mental disease," says Maudsley, "lies within small compass. No physic in the world can touch an insane vanity or suspicion, or pluck from the memory a rooted sorrow, or raze out the written troubles of the brain. If that is to be done, it must be done by the gradual operation of sound moral hygiene and the healing effect of time."

It is plain to every physician that when the system is broken down it should be built up, whatever the disease. In the drug treatment of insanity a large part of it is tonic, and for this I know nothing better than nux vomica and iron. Alcoholic stimulants should be used in the exhaustion of acute, or even chronic, mania and melancholia, and, as in general practice, in the old and feeble. Opium should be prescribed with great caution. It is of advantage in melancholia of the climacteric and sometimes in puerperal mania. Morphine combined with Indian hemp is a valuable hypnotic when other means have failed. Paraldehyde is one of the best hypnotics in the sleeplessness of acute mental disease, and, moreover, it is comparatively a safe remedy. Indian hemp is useful in many cases combined with chloral and bromide of potash. The bromides are beneficial at times with patients who can partially control themselves or are on the eve of an attack. Chloral I consider a rather dangerous agent in the treatment of insanity, and it is dangerous to life and more dangerous to reason. I am yet to see a lunatic recover while taking chloral, even in moderate doses. It has well been called "crystallized hell."

Dr. Babcock, Superintendent of the South Carolina Asylum, told me that the first year or two he served as assistant physician at the McLean Asylum, near Boston, chloral was largely used in that Institution, and it was a notoriously noisy place. Afterwards its use was discontinued, with an almost immediate cessation of noise and other disturbances.

Some months ago I was visiting an asylum, when a gentleman living near the Institution called to see the Superintendent on business. In the course of the conversation he said: "Doctor, what have you done to quiet your

patients? I have heard no noise for several months, and before that time I heard noises night and day."

The Doctor did not give him any definite reply, but my curiosity was excited, and I began to interrogate. I found that, whereas chloral had been largely used for the length of time the visitor had noticed the cessation of noise, the use of the drug had been discontinued.

Hyoscyamus is useful very often in quieting restless patients, and used for this purpose, it is valuable. The active principle, hyoscine, is one of the best hypnotics. In sleeplessness of old and feeble persons, or, indeed, in any feeble patient, nothing is better than a glass of hot milk, or milk and mush at bed time.

In masturbation, belladonna and cod-liver oil are sometimes effective. Cathartics are especially useful in melancholia, where there is apt to be constipation, and also in chronic mania. I have seen a threatened attack of mania cut short by a brisk saline cathartic. I have had only a limited experience with electricity in the treatment of insanity. Those who have tried it do not speak highly of it, though I have no doubt it may be useful in some cases.

Blood-letting has fallen into disuse; it may be that it is too little used, and the same may be said of revulsion. A seton in the back of the neck is the best form of revulsion.

Massage and the Swedish movement cure are useful in certain forms of dementia or melancholia, where we find it impossible to make the patient take exercise. A mattock, or pick, or a wheel-barrow are better than the most accomplished masseur or the most expensive Swedish movement cure apparatus.

It has long been known that a sharp attack of some inter-current bodily disease has sometimes a markedly beneficial effect in chronic cases of insanity. Some recent writer has suggested the possible advantage of the subcutaneous injection of some toxine in the treatment of old cases. The psychiatrist, you will observe, does not wish to be left behind in the mad rush for toxine cures.

Esquirol calls the insane asylum the great therapeutic agent in insanity. "The treatmemt of insanity," says a recent writer, "cannot stop with the discovery of the physical lesion, which is the disease, in fact, and the proper application of remedial agents to it, but must have in mind, and must attempt to correct, the disorder in conduct that is a large part of its symptomatology. In by far the larger number of cases this conduct disturbance leads to injury, in greater or less degree, of the patient, and necessitates, for this reason, the intervention of other control than the volition of the individual affected. Experience has demonstrated that in private families this control can seldom be advantageously provided. We need not stop here to discuss the reasons for this. Whatever theories may be advanced, practice

will determine that individual private treatment for the general classes of the insane, acute or chronic, is neither practicable nor advantageous. The feature of the disease that makes this true is the lesion of judgment and the defect in reasoning power, which prevents the individual from being able to judge correctly as to his own best interests. The restraint of conduct is, therefore, in most instances, a forcible one, and in antagonism to the wishes of the patient. Its enforcement must, more or less, irritate him and put him in antagonism to the agency enforcing the control. Where this is individual entirely, as it must be in a private home, it is more decidedly irritating than in an institution where architectural and institution arrangement largely supplant the individual control of the home. Complete change in environment such as institutional treatment affords, is often a wonderful regulator of conduct. The surprise or shock from the great contrast with home life takes the mental activity, the main-spring of action, out of the morbid channel in which it has run at home, starts up new lines and fills up the old ruts."

The best work the hospitals for the insane do is not the number of patients sent away cured. When the curative stage is passed, our best skill is called into requisition. We must then begin the hardest of all our work to call up in our patient the remnant of self-control that may be left, and to make them as happy and useful as is possible. The best hospitals are those which have the most quiet and orderly patients—which means the happiest and most useful.

Prognosis.—"The prognosis as regards life depends more upon the existence of other bodily diseases than on the condition of the brain affection. Certain forms of insanity are characterized by immediate inflammation of the cortex. Of these the most dangerous is dementia paralytica (general paresis), which proves fatal in one to three years. An unfavorable prognosis attaches to the conditions of excitement which are due to severe congestion of the brain. Persistent motor restlessness and insomnia increase the danger of sudden collapse, and rapid œdema of the brain may develop under such circumstances. The more violent the cause and the more recent the disease, the greater is the danger to life; as a matter of course old and feeble persons succumb most readily." (Kirchhoff.) "Prognosis as regards recovery from insanity requires much greater psychiatric knowledge."

In considering the latter prognosis, i. e., prognosis as to recovery from insanity, the curability of insanity will be included, in a general way, later on.

Acute mania and melancholia are favorable in persons under forty years of age without a strong heredity. Persons with fixed delusions, or hallucinations of hearing or smell, or with periodical attacks with long, free intervals, are unfavorable to complete recovery. A case slow in developing the disease is unfavorable, so are quick or sudden apparent recoveries. Improvement in physical health coincident with mental improvement is favorable, while, on the other hand, improvement in bodily condition without any correspond-

ing mental change is one of the worst indications. Post-febrile insanity, unless due to anæmia, is unfavorable, so also syphilitic and epileptic insanity. Insensibility to pain, to heat or cold, staring into the bright sunlight, absence of the feeling of satiety, the ingestion of nauseous articles, especially of excrement, are found almost invariably to mark unfavorable cases. When the individual begins to admit that he "has been wrong," as he usually expresses it, a recovery may confidently be expected; the same may be said of those in whom there is a return of the natural affections and tastes. This covers nearly all "the rule of thumb" prognoses common in asylums and will suffice for this paper.

Dr. John Thurman traced the history of 244 cases treated at the York Retreat, England, and, in generalizing from these data formulated the following rule: "In round numbers, of ten persons attacked by insanity, five recover and five die, sooner or later, during the attack. Of the five who recover, not more than two remain well during the rest of their lives; the other three sustain subsequent attacks, during which at least two of them die." The York Retreat was founded early in the eighteenth century by the Society of Friends. Being patronized almost exclusively by this sect, the subsequent history of each case was known. This rule has become classic. The recent results of treatment in the York Institution show that the rule formulated a century ago is practically unchanged now.

The curability of insanity, as shown by hospital reports, will now be considered.

The late Dr. Pliny Earle read a paper before the American Medical Psychological Association, in 1885, on the curability of insanity, which seemed to show that fewer cases recover now than did forty or fifty years ago, and to prove this, took the statistics from twenty American asylums during three periods of five years each. During the first quinquenniad there was 46.08 p. c., during the second the recoveries were 34.26 p. c., and during the third the recoveries were 29.91 p. c. I took the results of the same institutions for a fourth period from 1885 to 1890, which shows the recoveries for this period to have been 27.48 p. c.

These statistics show a steady decline from the first to the second period of 11.82 p. c., from the second to the third of 4.35 p. c., from the third to the fourth of 2.43 p. c. While the decline in recoveries is steady, the decline grows less and less. We will hope that it has at last struck rock-bottom, and that hereafter the recoveries in asylums will not fall below 27 p. c. And the next statistics I will present to you seem to show this.

Dr. Earle took the results of 58 institutions for 1884; these show 27.88 p. c. of recoveries. The same institutions for 1894 show 27.51 p. c. It is proper to state that the percentage of recoveries is taken, not on the whole number treated, but on admission, which is the only way to arrive at the correct results.

The 58 hospitals represent the whole United States. The result by sections, as shown by the Doctor, was as follows: In the New England States the proportion of recoveries was 24.92 p. c., the Middle States 21.42 p. c., the Southern States 34.27 p. c. and the Western States 29.81 p. c. The largest number of recoveries was in the Southern States and the smallest number in the Middle States. For the year 1894 the result by sections shows 19.78 p. c. of recoveries in the Eastern States, 26.89 p. c. in the Middle States, 36.08 p. c. in the Southern States, and 26.06 in the Western States—the Southern States still showing the largest number of recoveries, and in this instance the Eastern States the smallest.

When I come to analyze these statistics, I am at a loss how to proceed. It is claimed by many, and I see no reason to doubt their statements, that now psychiatrists are more particular than formerly, and many patients, who, forty years ago, were discharged as recovered, are now discharged as improved, or kept in the hospitals as chronic and incurable cases. And yet this accounts for only part of the facts. The old men claim there has been a change in the type of the disease, that there is more melancholy, more general paresis and other forms of incurable insanity caused by fast living, and the sharp contests for existence. Whatever may be the reason, you have the results before you, as shown by the hospital statistics.

Death-rate.—Unfortunately, I can give you the death-rate for one year only, and that is in the 58 asylums whose percentage of recoveries I have just stated. The average death-rate on the whole number treated in these institutions for the last year was 7.2 p. c. Taken by sections, as we did the percentage of recoveries, it was 8.1 p. c. in the Eastern States, 6.7 p. c. in the Middle States, 7.4 p. c. in the Southern States and 6.8 p. c. in the Western States. The smallest death-rate was in the Middle States and the largest in the Eastern States.

I am well aware that it is not fair to limit our inquiries to one year, that there are many influences, both favorable and unfavorable, which may, and do, modify the results if only one year is taken, but these influences are probably balanced by taking a large number of institutions. We may therefore consider that the average annual recoveries of the insane in American institutions is 27 p. c., and that the death-rate is 7.2 p. c.

It may not be uninteresting to you to know the results of treatment in the State Hospital at Morganton for the twelve years of its existence. At the end of the last fiscal year, November 30, 1894, 1,642 cases of insanity had been admitted; of this number, 642, or 39.1 p. c., had been discharged as recovered, and 213 died, or an average annual death-rate of 4.6 p. c. When writing this paper I did not have the data to prepare the statistics of our two other State institutions, nor the time to procure them.

In conclusion, let me thank you for the courtesy of your attention to a paper treating in so cursory a manner such a broad subject. My object has

been to direct your attention again to the whole subject, that the specia aspects may be before you for further study, should it suit you.

Apart from its interest to you as physicians, it is of vast importance to each one as a citizen of the State. The State expends each year a third of its yearly general revenue for the support of its institutions for this class, and it is impossible to estimate how much is spent by individuals and families in a way not to be collated in statistical estimates; and finally, in the broad field of philanthropy into which the profession of medicine puts each one of us, it is our duty to study out the wisest course for the care of this class of dependents.

If this effort of mine shall lead any to a clearer understanding of a single feature of the subject, or ameliorate the condition of one defective, I shall be repaid for my labor, and will plead this as an excuse for so long trespassing on your valuable time.

DISCUSSION.

Dr. Charles Duffy thanked Dr. Murphy for his paper, and, as a member of the State Board of Charities, he could see a very decided need that the paper was intended to cover. He said that there are about 2,000 or 2,200 insane people in the State and that the institutions now could not care for more than 1,200, and that the others were without care except such as they received from the various counties in such places as jails and county homes. And the suggestion of Dr. Murphy (the farming plan, or boarding plan), if carried out, might go a long way in improving this population. But it seemed to him that it could hardly be carried out unless a house could be arranged in the neighborhood of the hospitals now in operation. It would be almost useless for each county to try it. A practitioner at first can hardly tell whether the case will be incurable or not. But he may find that the case cannot be cured by that treatment, and then the first thing to do is to change the locality, the surroundings and air immediately. Now, if boarding places were established near these various hospitals, so that the hospital officers would have oversight and superintendence of the cases, many of these would be cared for—living there for a month or two. According to this plan we should hope that from $5.00 to $8.00 a month would be sufficient. As it is, the care in these hospitals amounts to about $12 or $15 a month.

Apart from the matter of cost, it is a great measure. Few people know about this; there are hundreds of these people all over the State in jails and felon's cells. They are dangerous and have to be confined and there is no other way. He said that in this day of civilization it ought to be improved, and he would be much gratified if the improvement should start with the reading of this paper.

Dr. Long thought that so much information was not needed, but that action was wanted. As long as there are many men of many minds they

would look at it from so many standpoints. There is a constant drain upon the purse of North Carolina to sustain these hospitals, a third of the revenue of the Commonwealth being used in this direction, and still sometimes we are in danger of not sustaining those already admitted. It seemed to him that if they could be colonized around these institutions and classified and be under the officers of these institutions, it would be much better than the present condition. He said that the Society had it in its power to control the public sentiment and could lift questions of this kind above partizan politics, if it would only take the initiative. He wished to add his moral influence, so far as it goes, to the suggestions made by Dr. Murphy.

Dr. Lewis said that the mention of chloral had brought to his memory a case that occurred in a hospital of the influence of chloral. He had remarked at the time that any one who took chloral for any length of time would wind up in an insane asylum, and what Dr. Murphy stated, that improvement was instantaneous as soon as the drug was discontinued in the Institution, verifies his belief. Inasmuch as all so frequently use chloral in their practice, they should bear in mind that chloral is a dangerous thing to use. He supposed that all must feel it a crying shame that so many of the insane were not treated. It seemed to him that the colonization scheme was the best plan, because it would be necessary for these people to have, not only expert care in regard to medical attention, but also in regard to nursing, and that therefore it was important for these institutions to open their doors for the purpose of training, what might be called, subsidiary attendants. If any county should be sufficiently enterprising to send a person for the purpose to one of the institutions to be taught to take care of its own insane, it would be well. He hoped that some movement would be made towards making advances in that line.

ABORTION AND ITS MANAGEMENT.

By Joshua Tayloe, M. D., Washington, N. C.

Mr. President and Gentlemen:—My first and pleasing duty is, to acknowledge the honor you have conferred upon me, one I heartily appreciate. I have chosen for my subject

Abortion and Its Management.

There is much variation of symptoms according to the time at which abortion occurs. If within the first eight weeks there may be severe or very slight pain; the accompanying hemorrhage, which, as a rule, is very profuse, the patient too often regards as an excessive menstruation, and the ovum often makes its escape enveloped in clots or with the decidua, which she fails to recognize, and the consequence is the abortion passes nnnoticed; such a condition is then attributed by her to a retarded menstrual period.

Often-times a portion of the chorion remains and she comes to her physician complaining of a prolonged flowing. Later on up to the time the placenta is fully developed, the cramps increase in severity, the lumbar pains become much more intense and the amount of hemorrhage much greater. If the death of the ovum has occurred several days previous to its expulsion, it usually escapes entire leaving no chorion behind. But should the ovum be alive or mechanical means be employed in bringing on the abortion, the fetus is usually discharged leaving all or a portion of the chrion behind. On examination we find the uterus very much enlarged and soft, except during a contraction, the cervix much softened and dilated, and often a portion of the ovum is found suspended from the os. When the ovum is entirely expelled the hemorrhage subsides, pains cease and a firm contraction of the uterus results. When a portion of the chorion or placental tissue remains, the pain, bleeding and dilatation may continue until the uterus is completely emptied or a contraction of the cervix taking place, the pains become slight, the hemorrhage stops, the mass being retained either to disintegrate and pass off in the discharge or become septic.

In exceptional cases we find death and infection of the ovum without hemorrhage, pain, dilatation or fetid discharge. In these cases the only noticeable indication we have of such an existing condition is the arrest of uterine development or growth, followed by chills or septic fever. After the third month the symptoms resemble those of premature labor, the pains are more rythmic in character, the hemorrhage more profuse, the extent of dilatation increased, and there is more often a complete evacuation of the entire contents of the uterus.

We consider abortion inevitable when it is the result of a cause that cannot be removed, viz:—such as severe pains, labor-like in character, profuse hemorrhage and widely dilated os, or when some portion of the ovum has been discharged. Threatened abortion we can often avert when it is dependent upon a cause that is remediable, and the above mentioned symptoms are very moderate.

We should bear in mind that when we are to deal with an inevitable abortion one of two things occurs,--either the uterus expels its contents entirely or retains a portion of the ovum. When the uterus empties itself contraction takes place, hemorrhage and pain cease with the exception of a slight flow for a few days, involution follows and a normal condition rapidly approaches. If there be retained portions of placental tissue or chorion, the clinical features of the case are much changed: the symptoms mentioned apparently subside at first though not entirely, the pain also for a while seems to cease and it is in these cases we are so often misled or deceived, as we are prompted to believe by the subsidence of these symptoms that our patient is rapidly going on to recovery, yet, so long as there remains any shreds of placental tissue or chorion, we need not look for permanent improvement for the symptoms will reappear, and the fragments will be then expelled or there may be a contraction of the os which causes the fragment to be retained until by degrees it breaks down and is passed off in the discharge. In such cases the hemorrhage continues scanty but extremely persistent often as long as six or eight weeks, and may reduce the patient to an extreme degree of weakness and anæmia. It is in these cases of incomplete abortion, if allowed to go on, that the retained tissues become infected and we have a septic process going on which is within itself well calculated to induce serious pelvic diseases or destroy the life of the patient. Sepsis is a condition which we should constantly be on our guard to detect, a condition which we should adopt every measure to prevent, and one which is to be the most dreaded of all others. We can never be too early in recognizing its first manifestation, nor can we act too quickly or work too vigorously when it is once made known to us by a chill or an elevation of temperature or a fetid discharge. When such symptoms arise we must have in mind its probable source and explore the uterine cavity without delay even though the cervix may be firmly contracted, with no hemorrhage or no discharge, for we may feel certain that there is septic material concealed within the cavity. The case goes on, the woman recovers from the immediate or impending danger, though the elevation of temperature, hemorrhages and the effects of sepsis leave the uterus in an enlarged condition rendering it more than apt to become displaced. The mucous membrane is much congested and softened furnishing a fertile seat for development of a chronic endometritis, or as we sometimes find, fungoid growths upon the endometrium. Such an existing condition predisposes the woman to tubal and ovarian trouble and she is apt

to suffer indefinitely from menorrhagia or metrorrhagia with the accompanying pelvic pains, and a rapid depreciation of the system in general. When any of the signs of impending abortion appear we should then make a careful examination. If the symptoms are not well marked, only slight pain and moderate hemorrhage with a slight amount of dilatation existing, and these symptoms being due to a remediable cause, as retroversion, we may hope by absolute rest in the recumbent position, removal of the cause, whatever it may be, and by the free use of morphia hypodermatically, to tide the patient over this period of threatening danger and allow gestation to continue with safety. On the other hand, should we find our patient suffering intense bearing-down pain, cramp-like and regular, with profuse hemorrhage and well marked dilatation of the os, we need not hope to avert the abortion.

The uterus, up until the end of the third month is comparatively small and cannot allow of any considerable accumulation of blood in its cavity, therefore I believe the use of the tampon to be perfectly admissible, not so much for the purpose of controlling hemorrhage as to excite more vigorus contraction. When it is to be used the patient should be thoroughly bathed, the vagina and cervix douched with a 1-3000 warm bichloride solution, then a strip of iodoform gause packed into the cervix and the vagina tamponed. This should be removed after twelve to eighteen hours when the ovum will usually be found either loose in the vagina or in the dilated os. If, however, at this time the ovum has not been expelled the packing should be repeated and if only a portion of the ovum has been expelled the remaining part should be sought for and removed at once, either by means of the finger or curette. If the case has been allowed to run for several days before falling into the hands of a physician and an examination reveals endometritis or any form of sepsis, the os should be dilated, the fragments of retained tissue removed thoroughly by the use of a sharp curette and the cavity well washed out with a hot carbolized douche, or a watery solution of iodine, as suggested by some writers, and then packed with sterilized iodoform gause. This packing should be removed in the course of eighteen to twenty-four hours and the vagina well douched with a hot carbolized or bichloride solution. Should there be a continuation of septic symptoms the uterine douche should be repeated, also the packing renewed. Where sepsis exists the use of irrigation, sharp curette and packing are indicated as have been described.

I always make it a rule to give my patient quinine for the first five or six days after confinement, or abortion, after which time she is put upon tonic treatment until her general condition is properly regained.

SOME BRIEF REMARKS ON PERTUSSIS.

By F. Homer Arthur, M. D., Harrell's Store, N. C.

According to certain writers pertussis was brought into Europe from Africa, in the thirteenth century. It would seem, however, that the ancients were by no means unacquainted with this remarkable disease. Hippocrates, in the 6th book on epidemics, and also in the 6th section of his aphorisms, speaks of a cough which, from the short description he gives of it may be regarded as the same affection that is now known under the name "Pertussis."

The first distinct and comprehensive account we have of the disease was furnished by Maezsay in the year 1414 in his chronological history of France Since that period numerous circumstantial records of its occurence in epidemics have been published and its nature and treatment have been discussed in not a few elaborate monographs.

Accepting the above as a brief history of Pertussis, and believeing you all acquainted with the symptoms, I will outline the speculative bacteriology autopsic phenomona and treatment according to Taylor, Loomis, Osler and others. The nature of the disease is still obscure and it has been regarded as a purely nervous affection, and due to pressure on the vagus by swollen tracheal or bronchial glands, but it obviously has very close similarities with the other zymotic diseases, and is distinctly contagious; generally requiring intiate contact, but sometimes apparently conveyed by clothing. It has a period of incubation of about ten days; it is protective against a repetition of the disease even more so perhaps than the exanthemata. From our present point of view, then, it would seem highly probable that it was due to a microörganism, and Afanasuff has described a bacillus which he finds in the respiratory mucous membrane and which has been found by another Russian physician in the sputum. The irritation of nerve terminals will explain the cough. It is not so easy to find a cause for the closure of the glottis which produces the whoop. It is generally thought to be spasmodic, but Goodhart suggests that it is only a passive approximation of the cords, or a failure to open freely when the sudden inspiration takes place. But by others Eberle and W. R. Smith, they state as other speculatives that in the infinite combinations of which the material elements of the universe are capable, agents may have been evolved by a peculiar concurrence of circumstances, which had the power of creating these affections in the human system. These are the only plausable explanations that can be given unless indeed we choose to refer them directly to the will of the Creator or their

immediate cause. Various and often contradictory, are the appearances discovered on post-mortem examination. This might naturally be expected when it is considered how diversed are the afflictions adventitious to this complaint, and at what different period of the disease death takes place. We cannot for example anticipate the same post-morten appearances in a case terminating fatally in consequence of pneumonia as in one where death results from apoplexy; Nor is it reasonable to presume there should be much uniformity where the immediate cause of death is so various or dependent on so great a diversity of incidental disorders. The respiratory organs being the parts most obviously implicated in Pertussis, pathologists have of course sought an explanation of the nature of the disease especially in the autopsic phenomena they exhibit. Traces of inflammation, in the mucous membrane of the bronchia and larynx have been frequently discovered and particularly described by many eminent writers. In one of these a considerable quantity of pus was discovered in the air passages the smaller branches of which were in a state of most intense inflammation approaching in some parts to gangrene. In some instances no traces whatsoever of bronchitis have been discoverable; but the lungs have been found exceedingly congested and the air-cells choked up with an extremely viscid mucus.

Various other appearances have at different times been observed such as pleuritic adhesions, tubercles in various stages of development, enlargement and scrofulous degeneration of the bronchial glands, etc.

Sometimes the respiratory organs may be entirely unaffected in their structure exhibiting not the minutest trace of any disease whatever, whilst the brain presents various striking marks of the previous existence of severe cerebral derangement.

In a case related by Dr. Webster of London, the following appearances were observed on post-mortem examination; both hemispheres were extremely vascular and the convolutions were so pressed together as almost to disappear. A good deal of serious effusion was visible under the piamater, particularly at the anterior and upper part of the brain, where a few spots of coagulable lymph were seen, and the membrane itself was injected with blood. The hemispheres slightly cohered anteriorly; the ventricles contained about two ounces of serum, and in the sheath of the medulla oblongata nearly half an ounce of fluid was discovered.

After all it is incontestible that in many cases of death from Pertussis no morbid appearances whatever have been detected on dissection; and there are many reasons for believing that the inflammation and other phenomena so frequently observable on post-mortem examination have no essential connection with the disease but are altogether adventitious or secondary.

As the complications are chiefly broncho-pneumonia with injected laryngeal tracheal mucous membrane and swollen bronchial glands, the child

should be kept in a warm but well ventilated room but confined to bed is not necessary in an uncomplicated case. A variety of drugs have been used to check the paroxysm of pertussis, but without any very gratirying success in most cases. Belladonna is much used in the form of tinctvre of which 2 or 3 minims may be given to a child two years old, three times a day and larger doses to older children. The dose may be cautiously increased up to 10 or 15 mimims in a child of five or six.

Hydrocyanic acid, chloral, potassium bromide, hydrobromic acid and antipyrin are often used. The various antiseptic inhalations have been lately employed; the cases at the Evelina Hospital were treated by impregnation of the air of the ward with carbolic acid, with no striking result. Recently (Mohn, F. E. Manby) good results have been got by burning sulphur in the rooms inhabited by the child. An amount equivolent to 10 grains per cubic foot is burnt in the empty room; after five hours the doors and windows are thrown open and the child sleeps there the same evening. The day nursery is similar fumigated during the night.

For obstinate cases of cough after subsidence of the whoop, alum internally is of great value (2 to 5 grains) or change of air to the seaside.

The complications must be treated much as they would be apart from pertussis. For extensive bronchitis or broncho-pneumonia the steam-tent cotton wool jacket or linseed-meal poultices, with carbonate of amonia impecacuanha quinine and antifebrin form the best method of treatment.

REPORT OF THE CHAIRMAN OF THE SECTION ON MATERIA MEDICA AND PHYSIOLOGY.

By A. R. Wilson, M. D., Greensboro, N. C.

Nuclein.

The avaliable source of these substances, (for there are many different kinds of Nuclein,) are yeast, eggs, spleen, testicles, bone-marrow, thyroid and thymus glands, brain substance, and blood. The profession in America is indebted to Prof. Vaughan, of Ann Arbor, Mich., more than to anyone else for calling special attention to this class of substances. In reference to this subject I cannot do better than to quote to you the most important of his conclusions as follows: (Medical News 1894.)

1. The nucleins and nucleinic acid are powerful germicides. This was first shown in a paper by McClintock, Novy and myself published in the Medical News of May 20th, 1893. Additional facts on the point were given in my address before the Medical Section of the Pan-American Medical Congress, and published in the Medical News of October 7th, 1893. This work was confirmed in a paper published by Kossel in February 1894.

2. The germicidal constituent of blood serum is a nuclein. This was shown in a paper by McClintock and myself, read at the Pan-American Congress, and published in the Medical News of December 25th, 1893.

3. Rabbits and guinea pigs may be protected against virulent cretures of the diplococcus of pneumonia by previous treatment with hypodermic injection of a solution of yeast-nuclein.

4. The immunity thus secured is not due to the action of the nuclein as a germicide directly.

5. The process of securing this immunity is an educational one, and most probably depends upon the stimulating effects of the nuclein upon some organ whose function it is to protect the body against bacterial invasion.

6. The longer the nuclein injections are continued, and the more frequently they are administered, the more complete is the immunity secured.

7. In order to obtain this immunity, the inoculation with the germ must follow soon after the treatment with nuclein.

8. Attempts to render guinea-pigs immune to tuberculosis by the methods so far employed show that previous treatment with nuclein retard, but in the majority of cases do not prevent the development of tuberculosis from subsequent inoculations.

9. Attempts to arrest tuberculosis already developed in guinea-pigs, by treatment with solutions of yeast-nuclein, have been followed by varying results, depending upon the virulence of the germs used in inducing the disease, the stage of the disease when the treatment is begun, and the susceptibility of the animal, especially as influenced by age. Upon this point we have bestowed much labor and time, but the results have been so conflicting that I am not yet prepared to formulate any positive conclusions. I have in my note book details of experiments upon one hundred pigs, and I feel that I am as little able to speak positively on the subject as I was when the experiments were begun.

10. I have used nuclein with benefit in the treatment of indolent ulcers, tonsillitis and streptococcus diptheria. Experiments carried on by this investigator with a view to immunizing rabbits to tuberculosis leads him to express this conclusion: "These experiments indicate that rabbits may be rendered immune to tuberculosis by previous treatment with yeast-nucleinic acid." The conclusion arrived at by Dr. Vaughan upon the treatment of rabbits with nuclein is expressed: "These experiments convince me that when the treatment is begun within three or four days after the inoculation the development of tuberculosis in rabbits may be prevented by yeast-nucleinic acid. These experiments will be repeated, and the length of time between the inoculation and the beginning of the treatment will be increased."

1. In pulmonary tuberculosis which has progressed to the formation of cavities, nucleinic acid from yeast will not produce a cure. Unfortunately these are the cases that we are expected to cure. These are the cases in which any proposed remedy for the disease will be tried, and it should be stated most emphatically that no claim is made by the author for nucleinic acid in these conditions.

2. Even when tuberculosis is of long standing, and when the extent of the tissue involved is great, so long as secondary infection with pyogenic germs has not occurred, the proper use of the remedy may retard the progress of the disease.

3. In initial cases of pulmonary tuberculosis, when there is no secondary infection, and when the area involved is small and the resistance of the patient not too much reduced, the proper employment of this agent may produce at least a temporary cure. We say, "at least a temporary cure," because none of these cases have been under observation a sufficient length of time for the writer to say that bacilli will not reappear.

4. In the few cases of urinary tuberculosis that are reported in this paper the results have been remarkably satisfactory. The results so far encourage continuation in the work. There is no season for supposing that the nueleinic acid obtained from yeast has any properties superior in a curative way to the nucleins contained in other substances. The number of nuclein acids are only limited by the kind of cells in existence, and I shall compare others

with this one. The early detection of tuberculosis is now a possible, not to say an easy thing, but it is a lamentable fact that to many practicing physicians it is an impossible thing. This will be the case so long as our most popular and numerously attended medical schools fail to give adequate individual instruction in bacteriology. The sputum of every patient who raises any should be examined for tubercle bacilli, and urinary sediment containing pus, blood, or much epithelium should be similarly treated. I am convinced especially from my experiments on animals, that nucleinic acids, improperly used, may harm. It acts by stimulating the organs that elaborate the polymelian corpuscles, and these may be overstimulated. Nucleinic acid fails to be of service unless these cell-forming organs respond. They may fail to respond on account of lowered vitality, or they may be paralysed, as it were by an excessive dose of the stimulant. The agent is not one to be used indiscriminately. Already some physicians are supplying tuberculous patients with hypodermic syringes and solutions of nucleinic acid and telling them to go ahead and treat themselves. Such practice as this makes the study of this subject result in a misfortune.

In the Therapeutic Gazette of January 1895, Dr. Frank W. Gorber writes of the clinical use of nuclein. Dr. Gorber thinks this substance (yeast nuclein) has the power to stimulate the production of white-blood corpuscles, which are the natural defenders of the body and that these substances are, besides posessing this power, valuable as germicides. If it is true that the red-blood corpuscles are derived from the white blood corpuscles, which is highly probable, then it follows that nuclein is an almost direct enricher of the blood supply. Clinical experience has undoubtedly proven that nutrition is improved by the use of nuclein. The author believes that a large share of the good results affirmed to have been procured by the use of the so called animal extracts may be properly attributed to a possible nuclein which they may contain. The author reports thirteen cases, ten of which were tuberculous cases, one of neurasthenia, one follicular tonsillitis and one a troublesome sinus of the palm of the hand. The drug was given once daily hypodermically, except in the last case mentioned, in which it was used locally, a solution of nuclein being thrown into the sinus. Much to his surprise and pleasure he found the purulent discharge was at once and permanently stopped. The dosage varied from fifteen to forty-five minims, but the usual maximum dose wase thirty minims. Thorough antiseptic precautions were observed and the needles were frequently sharpened. The injections were made into the muscular tissues as near the tubercular lesion as could be, although this seems not to be essential; they were many times given in the arms. After the injections rubbing the part seemed to hasten absorption of the solution and to lessen the period of pain which was not lengthy or severe. From frequent injections the part becomes larger and more insensible. Abcess never resulted. The author believes from his experience that we are

warranted in the claim that nucleins we possess are agents of value in incipient tuberculosis, but that little can be expected of it in cases well advanced. That we are not in a position to state that it is positively curative, yet by the early use of nuclein in consumptive cases we can add to their comfort and give them a longer lease of life. The preparation used by Dr. Garber was the solution made by Parke, Davis & Co., after the formula of Prof. Vaughan.

Bleyer (Medical Record) tested nuclein clinically in diptheria and allied throat diseases. This author adds praiseworthy testimony to nuclein. He also used the nuclein made by Parke, Davis & Co., according to Vaughan's formula except in four of his cases. He reports fifty-two cases. From what experience he has had with nuclein he believes it to have proved itself a staunch medicament and will undoubtedly be a most valuable adjunct to organo-therapy.

Dr. Aulde affirms in the American Therapist: "I am prepared to assert that in this phosphorised proteid (nuclein) we have one of the most promising remedies that has ever been offered to the medical profession in the history of its existence."

Chloralose.

Chloralose is the result of the action of anhydrous chloral on glucose. It is bitter to the taste, soluble in hot water and less soluble in cold water. Dose ranges from one to eighteen grains. E. Maraudon De Montyel (Bull. Gener. de Therapeutique), has made an extended study of chloralose physiologically and therapeutically, and the following are some of the conclusions arrived at by this observer: Its most pronounced action is upon the nervous system and this action is manifested chiefly upon the brain and spinal cord. Two effects result from its action on the brain, depression and excitability, the former being intense and lasting, the latter fleeting and slight. The sleep produced by chloralose comes on quickly, is profound, lasts several hours, is easily disturbed but the mind remains calm and no dreams are produced. A feeling of well-being follows the narcosis. Preceeding sleep exceptionally there is heaviness of head, intoxication, stupor and cephalalgia the last being well marked but not exaggerated. Lassitude, weakness of lower extremities and other troubles occur at other times, at different days and in the same patient. The exciting action upon the brain is slight and transitory, sometimes being imperceptible; but on certain individuals it may lead to a crisis of delerium. Its action upon sensation is feeble and irregular. Upon the reflexes its action is also feeble but they may be excited above normal. Chloralose produces two forms of effect on motion, as upon the brain. These effects are marked, one is characterized by muscular hyper-excitability, the other muscular relaxation; but contrary to what happens in the brain, it is the exciting action which is most marked, the sedative action being slight and fugacious. A sense of weakness of the lower extremities

appears as a result of the sedative action on muscles. The other or exciting action manifested itself upon the muscular system in muscular tremors, contraction of a single muscle or group of muscles, fibrillary contractions, contractions of all muscles of one limb or region of body. There may be sudden jumping contractions of the muscles of the body or crisis of general convulsions. This muscular hyperexcitability caused by the drug is lessened by the sleep produced by it. The diminution or intensity of the phenomenon is seen during sleep according to the degree of narcosis. The state of the dynamometric force of the temperature, of the number of respirations, of the arterial pressure, and of the pulse rate varies with the modification of the cerebrospenal system. During the psychical sedation accompanied with muscular hyperexcitability there are observed an increase of the dynamometric force, an increase of the temperature, an increase of the number of the respirations, an increase of arterial pressure, but a diminution of the pulse rate. During the psychical excitability associated with muscular relaxation, there are noticed a diminution of the dynamometric force, a diminution of temperature, a diminution of the number of the respirations, a fall of the arterial pressure, but an increase in the number of the heart-beats, the latter actions being less pronounced than the preceeding ones which always come on first. The diminution of arterial pressure is really relative, for it remains higher than before the administration of the drug. "Chloralose is able to steady a very irregular pulse, the decrease in the number of heart-beats continuing after awakening from the sleep produced by the drug. It produces a marked increase in the appetite; gastric disturbance, eructations, thirst, and vomiting are exceptionally produced by it; even then the appetite is increased in these cases. The action of the drug varies, therefore in prescribing chloralose care should be exercised. While some persons bear large doses well, in others small doses cause marked muscular symptoms and other troublesome effects, like wakefulness. The drug is better borne in small than in large quantities when given as an hypnotic. "The symptoms of wakefulness produced by the drug are seen in the treatment of epilepsy, while the muscular hyperexcitability is more frequent and marked in hysteria and general paralysis, but not so pronounced in insanity. On ther hand the hypnotic action of the drug is shown to be most efficacious in epilepsy, less so in senile dementia, and more in insanity than in general paralysis; while on the contrary its sedative action is more pronounced in the latter than in the former affections." (Therapeutic Gazette.)

Cappelletti has tried the drug in insomnia of asylum patients, commencing with a dose of three grains. The result was quiet and uncomplicated sleep the dose being varied as necessary to suit the patient. Where insomnia was only slight 3 to 6 grains proved to be enough, the more severe cases required form 12 to 18 grains. Sleep supervened in about thirty minutes, the patient experiencing a pleasant drowsiness before sleep was produced. He found

hysterical patients very susceptible. The dose of 3 to 6 grains produced 6 to 7 hours sleep. The dose of 12 to 18 grains caused convulsive attacks without sleep. He thinks chloralose particularly efficacious as an hypnotic if given in the evening. Therapeutic Gazette 1894.

Mr. Chas Flening (Practitioner 1894) concludes that we may expect benefit from this drug in all forms of functional sleeplessness, in the insommia of physical excitement, of hysteria, of neurasthemiâ and overwork, of functional cardiac irritability, in attacks of epilepsy and somnambulism. Secondarily, its use may enable us to separate objective from subjective pain, and I so keep, for instance, in the differential diagnosis of some forms of hysteria. It will avail nothing in insomnia due to alcoholic excitement, multiple neuritis, or cerebral hemorrhage, or the sleeplessness due to any painful organic lesion or peripheral irritation. In the insomnia of lunatics, when there is depression, it is said to be useful in large doses. In the early stages of Bright's disease, chloral, owing to its effect on the blood pressure, is probably more efficient. American Journal, Medical Sciences 1894.

M. Touvenaint reports two cases illustrating the dangers of chloralose. (Revue de Therapeutique Medico-Chirurgale):

1. A diabetic received at night about 3½ grains; he immediately slept, but awakened in two hours for urination. He was as if intoxicated, dull and moved with difficulty. Fifteen minutes afterward he took the same dose. About 3 o'clock in the morning he awoke, the prey of terrifying malaise, general trembling, deafness, incoherent language, nausea, deglutition impossible, and later marked dilatation of the pupils, pulse feeble and slow, involuntary evacuation of bowels and bladder. Clysters of black coffee, ether, sinapism and stimulating frictions were necessary to combat the symptoms.

2. The insomnia and pain caused by a uterine fibroma was treated by the same amount of chloralose as above stated, taken in two doses. Precisely the same symptoms supervened and in addition vomiting. It is noteworthy that the dose given in these cases did not exceed the mean dose recommended by the authors who have extolled the remedy.—American Journal, Medical Sciences 1894.

This remedy seems to be not entirely free from danger, while so far as I am aware, no death has been reported as a result of its employment. The drug should be given with due discrimination and care. From the reports concerning this substance it seems likely we will have added to our already long list of hypnotics one which will prove itself of great usefulness.

Trional.

This remedy is akin to sulphonal, the difference being that trional contains three ethyl groups whereas sulphonal has only two; Dose from 5 gr. to ʒ i. K. Rychlinski (Knonika Lekarska 1894) used trional in foruteen cases of

insomnia in neurotic and insane people. The dose varied from 7½ to 60 grains, total observation one hundred. Comparison was made with sulphonal, chloral-hydrate and sulphate duboisine in several cases. Conclusions by this observer were as follows:

1. Trional acts admirably, especially in cases of insomnia due to functional disturbances in the nervous system.

2. It does not effect in the least the cardiac action, even when heart disease is present.

3. It has no bad taste and is easily soluble in hot tea or milk.

4. The patient awakens without any disagreeable sensations about the head.

5. The sleep-giving dose is smaller in comparison with other drugs of the kind.

6. On the whole trional should be preferred to all our ordinary hypnotics.—Therapeutic Gazette 1894.

Egasse (Bull. Gener. de Therapeutique) deduces the following conclusions after reviewing the literature concerning the therapeutic uses of this substance:

It is not a very toxic substance. That trional is shown to be an excellent hypnotic after clinical trials, producing, especially in the insane, a calm sleep, its reparative influence being of long duration. It possesses the advantage over sulphonal in rapidity of action even when given in small doses. That trional is not strictly analgesic, but by lessening pain in many cases acts as an hypnotic. It produces bad effects rarely, and when they occur they are less noticeable than in the case of sulphonal. It may be given with opium or morphine. The dose ought not to exceed 45 or 60 grains, the average amount given varying from 15 to 22½ grains. That the age, sex of the person, as also the character of the malady to be combatted should be taken into consideration when administering the drug. That the clinician should fix the dosage. Trional is given in capsules, catchets, or a better way is to suspend it in a warm mixture which makes its solution easier and aids absorption. That it should be given thirty minutes before retiring at night. In so doing the vertigo is not felt by persons taking the drug, which at times follows its administration. That trional is destined to supplant sulphonal and is on the whole an excellent hypnotic.—Therapeutic Gazette 1895.

Claus (Internationale Klinische Rundschau, 1864.) makes quite a favorable report upon trionol as an hypnotic for children. He gives the drug in doses of 3 to 22½ grains according to age, and finds the drug a reliable hypnotic, producing normal sleep with no bad effects following the awakening in the morning. In a case of broncho-pneumonia, child aged 5 years, 11 grains at once caused ataxic symptoms. The patient does not become accustomed to its effect. Sleep is usually produced in ten or fifteen minutes after the drug

is taken. Its action on the intellectual, circulatory and respiratory functions si nil. Its influence in painful affections is unsatisfactory. In chorea, pavor nocturnus, and in insomnia due to dentition or indigestion the most satisfactory results were obtained. In the latter class the influence upon the digestive functions produced by the drug proved beneficial, thus agreeing with previous experience in the use of trional among the insane. The doses laid down by this observer are as follows: One month to one year, 3 to 6 grains; one to two years, 6 to 12 grains: two to six years, 12 to 18 grains; six to ten years, 18 to 22½ grains. It is best given in hot milk, or confection of honey thirty minutes after evening meal or a quarter of an hour before retiring.—American Journal, Medical Sciences, 1895.

Lactophenin

Of the antipyretics, antineuralgics and analgesics brought to our notice within the past year, this substance which is a new phenetidive derivative and which is designated chemically lactyl-para-phenetidine, seems to merit most consideration. Dr. Schmiedeberg made a thorough pharmacological examination of the substance and lactophenin owes its therapeutic introduction to the following quotation from his report; "Lactophenin acts like the antipyretics of the antipyrine and phenacetine classes, in promptly redncing abnormal bodily temperature. At the same time it produces in enhauced degree the well known phenacetine-effect of hypnotic and analgesic relief. Respiration and circulation remains unaffected. Despite comparative insolubility, lactophenin is quickly absorbed in the stomach and its full effect is promptly induced. Dr. Landowski, of Paris; Prof. Jaksch, of Prague; Dr. Jaquet, of Basel, and others have made clinical trials of this new remedy and with one accord all make favorable report concerning its action. These trials have demonstrated that lactophenin is antipyretic in the dose of .6 of a gramme; is hypnotic in the dose of one gramme and that it is an antinervine. It is given in capsules and in doses ranging from .5 to 1 gramme which may be increased to 6 grammes *pro die* according to the antipyretic or sedative action desired. The temperature falls gradually and the reduction is maintained for several hours and the subsequent rise of temperature is not accompanied by chillness or shivering. Dr. Jaquet thinks the chief advantage of lactophenin does not lie in its antipyretic properties, but in its soothing hypnotic effect. In individual cases one or two hours after taking one gramme a quiet sleep supervenes lasting several hours. In most cases excited patients are observed to become calm and they feel easier and better. In cropous pneumonia Jaquet found that patients expressed themselves as feeling less pain and that they could breathe easier. In phthisis (4 cases) the cough was alleviated and the patients slept better. The soothing effects of the remedy was strikingly shown in cases of erysipelas with violent delirium. This observer thinks lactophenin will occupy a place between sulfonal and

urethane. Prof. Jaksch is quoted as saying: "Lactophenin exerts an uncommon sedative influence on the patient. Delirium vanishes, the sensorium becomes free, and the patients without exception rejoice in a subjective sense of well-being which I have thus far observed in no other method of treating typhoid." A few unpleasant by-effects are noted by these observers, viz: Vomiting in three cases, one of these cases suffered a chill after taking a second dose. Certain individuals experienced a sensation of heat and pressure in the epigastric region. Occasionally cyanosis was noted but no other symptom proceeding from the respiratory or circulatory systems accompanied the cyanosis. his symptom disappears usually even if the administration of the medicament is prolonged. Dr. Landowski makes the following summary of his experience with lactophenin: "The remedy irrespective of causing slight faintness and slight prespiration agrees very well with patients. About twenty minutes after being taken it has excellent analgesic effects in the case of migraine, nervous headache, rheumatic troubles, as well as in influenza-neuralgea. The remedy seems to be destined to take a place by the side of phenacetine, and more especially by the side of antipyrine, whose good properties it possesses together with the advantage over the latter, in that lactophenin agrees well with those patients to whom antipyrine is repugnant."

Von Roth (Wiener Klin. Wochenschaift 1894) summaries his experience with lactophenin as an antirheumatic thus:

1. The pains, local reddening, and swelling, as a rule, disappear after twenty-four to forty-eight hours; cure is rapid.
2. Temperature is permanently depressed.
3. In spite of large doses there were no objectionable collateral effects.—Therapeutic Gazette, 1894.

Ferratin.

This substance is a compound of iron, and was separated by Prof. Schmeidberg from pig livers and contains about 7 per cent. of iron. It is now produced by synthesis and the synthehical product is said to act in every way as does the compound obtained from the pig livers. It is an acid albuminate of iron. It appears as a reddish brown powder, but little soluble. The dose ranges from 1 to 30 grains; children taking daily from 7 to 15 grains; adults from 20 to 30 grains.

Germain See in a report to the Academie de Medicine says after prolonged use of ferratin it does not cause gastric or intestinal derangement either in animals or man; that it acts as a slight astringent without causing injurious stimulation, and that H_2S is not formed by it as a result of putrefaction in the intestine. Appetite is restored and improvement in the quality of the stools is manifested; absorption of the remedy is slow. He suggests that the dosage be so managed that the intestine shall always contain ferratin in

excess so that the organism can use it according to its needs. He says that there is no reason to fear that an excess of iron will accumulate in the organs as absorption aud elimination appears to balance each other. This observer regards ferratin as an alimentary substance and recommends its employment in apparently healthy meu or in chloratic subjects and children, as its curative action is not interfered with by injurious secondary effects as often is the case when usual iron preparations are used.—Therapeutic Gazette, 1894.

Prof. Marfoni who studied the physiological conduct of ferratin in the view to determine its therapeutic value, found that in dogs thirteen to fourteen per cent. of the amount given was assimilated. He proved by a series of experiments that the ferratin deposited in the liver is in reality the reserve iron for blood formation. That it is not excreted by the kidneys or intestine, even when injected directly into the blood stream, except in very small quantities. This is different from the inorganic salts of iron which are excreted into the intestive. He likens it to "haematogen" which was isolated by Bunge from the egg. According to Marfori and other observers also it increases the number of red blood corpuscles and the amount of the haemoglobin of the blood.—Therapeutic Gazette, 1894.

Dr. Gr A. Fackler, (Med. Age.) before Cincinnati Academy of Medicine bases the physiological and therapeutic importance of ferratin, "upon the fact that, after absorption, it is immediately avaliable, while other compounds of iron, including simple albuminates, must first be changed into ferratin in order to become active agents."

The therapeutic indications are those of the other iron preparations.

Trikresol.

This is a new autiseptic, germicied, and disinfectant which has elicited much attention within the past year and seems to give promise to a wide field of usefullnees. Laplace, of New Orleans, and Fränkel, of Marburg, were the first to call attention to the kresols. Trikresol is a combination of ortho-para and meta-kresol. These kresols are the next higher homologues of phenol and differ from phenol by replacing one atom of hydrogen by the methyl group CH_3. Major W. Reed, Surgenon U. S. A. in a paper on the "Germicidal Value of Trikresol" at the fourth meeting of the Association of Military Surgeons of the United States at Washington, 1894 says: "A ½ per cent. solution of trikresol requires from eight to twenty minutes contact to destroy the vitality of the staphylococus aureus; a one per cent. solution kills it absolutely in thirty seconds; and a 1-800 solution restrains the growth of the organism. As regards the streptococcus erysipelatos ½ per cent. solution of trickresol killed it in thirty seconds; 1-800 solution restrained its development. Bacillus pyocyanus requires one and a half minutes contact of a ½ per cent. solution; a 1 per cent. solution kills it in thirty seconds; and a 1-800 solution restrains its development. One advantage which the kresols are

said to possess is that the presence of albumen in the fluid to be disinfected does not interfere to a marked extent with their germicidal action. This is of very great importance, if true, as far as my own experiments have gone, it appears that a 1 per cent. aqueous solution of trickresol is, even in presence of fluids rich in albumen, sufficient for the prompt and certain distinction of the pathogenic bacteria ordinarily met with by surgeons."

Dr. M. Charteris, of the University of Glascow, together with Dr. John Morton studied trikresol with regard to its physiological action (Laucet 1894); Conclusions arrived at were:

1. Trikresol is a germicide three times stronger than pure phenol.
2. It is three times less toxic.
3. Its advantages for surgical purposes are very pronounced.
4. In all probabilities some combination of it with an alkaline base will in the future be used internally with safety and profit in specific infectious diseases.

Favorable results have been reported from the use of this remedy in typhoid fever by Dr. H. Kölsch, (Sem. Med.) he having treated twelve cases of this disease with this drug alone, all other remedies being excluded. It was given mixed with olive oil and was administered in capsules half hour to an hour after eating, in doses of one and a half grains. The common complications were entirely absent, as also were relapses. It exerted a favorable influence on the fever, there being gradual abatement of pyrexia and definitive defervescence.—Am. Medico Surgical Bulletin 1894.

Dr. Robert Lee, of London, (Laucet 1894) says it is useful "in the treatment of many maladies by inhalation."

Dr. E. A. de Schiveinitz, (Therapeutic Gazette 1894) after experimenting with trikresol as an autiseptic for collyria recommends a 1-1000 aqueous trikresol solution in preparing collyrina. Even a stronger solution 1-500 caused no burning when dropped into his own eyes. He further suggests the rinsing of pipilles after use in trikresol water, a small vial of this should be carried in the ordinary treatment case for this purpose. He thinks by this means fungus and bacterial growths often found in collyrina might be prevented as also complications from using contaminated solutions. In concludsng he says: "As trikresol has been found to be such a good autiseptic and is fatal to the pyogeves aureus, it would doubtless prove very useful in general apthalmological practice."

The advautages claimed for trikresol are that it is a pure colorless liquid: makes a clear solution; is three times as strong as carbolic acid; is comparatively non-toxic; does not corrode instruments; does not benumb hands like carbolic acid; is cheap. The usual strength for general surgical purposes is a one per cent. solution; in many cases one half per cent. solution will be found sufficient.

In submitting this report I feel the task has been but poorly done. To have attempted to even casually call your attention to a majority of the new remedies which have been introduced during the past year would have taken much more time than is alottəd to this report, in fact to have given a complete report on any one of several of the new productions of Materia Medica of the year just closing would have occupied more time than is allowed. Nothing is claimed for this report save that it is a collection of the opinions of the investigators and observers quoted. Duly appreciating the appointment as chairman of this important section it has been my endeavor to present those subjects which seemed to merit consideration. I am indebted to Dr. Albert Anderson for the report upon the antitoxian of diptheria.

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

By Albert Anderson, M.D., Wilson, N. C.

In 1883 Klebs, in his investigations as to the cause of diphtheria, found a bacillus in false membrane from a diphtheritic throat. Loeffler, in the following year, isolated the bacillus, discovered its culture medium, reproduced the disease in animals with all the symptoms except paralysis. Four years later Roux and Yerson, of Paris, produced this symptom, and thus gave to the world all the necessary proofs of a specific pathogenic microbe, namely:

(1) Its constant presence in all cases of the disease.

(2) It is never found in the body except during the course of the disease or incubation period.

(3) Reproduction of the disease when properly introduced into an animal susceptible to that particular disease.

Scarcely had these proofs been given to the world before the principles of a specific remedy were conceived in the minds of a few distinguished bacteriologists in different parts of the world.

The pioneer in this great work was our countryman, Dr. George F. Muttall, of Johns Hopkins University, the first to discover the bacteriocidal properties of the blood. Among his colaborers, faithfully as well as scientifically working upon the basis of this discovery, may be named the Frenchman Roux and the German Behring as occupying the next places of honor in the galaxy of original investigators. The result of their labors and of others is antitoxin—the serum from the blood of an animal "rendered refractory to the disease of diphtheria." It is a pale, amber-colored liquid. What I know of the process of making this serum is from observation and study of Dr. J. J. Kinyoun's work on this line during my stay in his laboratory last January and February. Through the kindness of the State Board of Health I spent about six weeks pleasantly and profitably under the instruction of Dr. Kinyoun and his able assistant, Dr. Rosenau, mainly in the study of bacteriology.

At Washington the horse is used to obtain the serum. He is first examined as to his health. Mallein and tuberculin are injected at different times to diagnose respectively glanders and tuberculosis. If there is no reaction and the horse is apparently healthy other ways, he is selected.

To immunize an animal it is not necessary to inject the bacilli of diphtheria, but their toxins answer the purpose better. Dr. Kinyoun's method in preparing toxin is as follows: A virulent culture of the bacillus diphtheria, capable of killing a 500 gram guinea pig in 24 or 36 hours, is put into a flask containing alkaline peptone bouillon. This flask remaining in the thermostat

*Read before the North Carolina Medical Society, May 15, 1895.

twenty-four hours at 36° C., grows sufficiently rich in bacilli to be termed a stock culture. Forty c.c. of this inocculates a certain quantity of sterilized alkaline peptone bouillon, which is put into a flask, having a straight neck and a small opening at the side connected with a tubulature Several of these are inoculated at one time. Placing them in the thermostat at 37° C. for 24 hours to start them, when each flask is connected with an aspirator for the purpose of passing a moist current of air slowly through the bacilli from mouth to tubulature. After about three week's growth these cultures are filtered through a Chamberland filter tube into sterilized flasks and kept for use: If $\frac{1}{10}$ c.c. of this toxin will kill a guinea pig of 500 gram weight in 24 hours it is considered of standard strength and toxins are graded according to this standard. This is now injected into the horse selected subcutaneously, starting with 0.5 c.c. and gradually increasing the dose as tolerance is established, till 300 c.c. or more may be injected at one time—this producing no general reaction, but only a local œdema, which disappears in a short time. This condition indicates immunization. It has been found necessary to give large and frequent doses of toxin late in the treatment to produce a good quality of antitoxin. To test the strength of the serum, only a small quantity is first drawn. A protective strength of 1 to 50,000 is good serum. For drawing a large quantity of blood, the necessary apparatus consists of a trocar and canula, a rubber tube 20 inches long, one end attached to canula and the other to a glass tube about 10 inches long; this outfit is sterilized and kept in a 5 p. c. solution of carbolic acid. Wide-mouthed bottles, holding about two quarts, are used for receiving the blood. In preparing the bottles, a piece of paper is tied over each mouth and another piece in the shape of a hood is placed over this and then sterilized.

Preparation of the Horse.—A nip is thrown over the lip of the horse and a cloth over his eyes for a blind-fold. Hair over the place selected to enter the jugular vein is clipped and shaven and the skin scrubbed well with a 5 p. c. solution of carbolic acid. Incising the skin down to the vessel, the trocar is thrust into the vein with a steady hand. The assistant, removing the hood of paper, plunges the glass tube into the bottle through the paper and the operator or another assistant compresses the veins below and the blood begins to flow. After drawing about a quart into each bottle, the assistant withdraws the glass tube and immediately replaces the hood of paper. From three to six quarts are drawn at one time. The blood is allowed to coagulate and then removed to an ice-chest in the laboratory to stay 24 hours, in which time the serum separates sufficiently from clot. The serum is then drawn off with sterilized pipettes into a receptacle, after which it is passed through a Chamberland filter, one-half p. c. trichresol solution is added for preservation, and in this condition bottled for use.

A syringe named after Roux is used for injection. It holds about 20 c.c. It is composed of a barrel consisting of metal and glass, which are separated

by two India rubber washers, an India rubber piston, a rubber tube with adjustments and a needle little larger than an ordinary hypodermic. The adjustable rubber tube serves an evident purpose in case the child moves. This syringe is sterilized in boiling water for five minutes before using. When ready to administer the serum, thoroughly cleanse the site of insertion and charge your syringe with just the amount to be used. Gather a fold of this skin in the flank with the left hand, insert the needle with the thumb and index-finger of the right hand at the base of the fold, allowing the barrel of the syringe to rest between three fingers and the palm of the right hand. Now, taking the syringe into the left hand, the right is used in gently pressing the piston with a gentle rotary motion. Place absorbent cotton over the puncture and the serum that flows back through the orifice, meeting with the cotton, forms a good serum plug. No massage is necessary after the injection.

The age of the patient, duration of the disease and severity of the case must determine the dose. As a prophylactic it has a better record than as a remedy. There has been no failure to protect when genuine serum has been given in time and in sufficient quantity. Wherever children are necessarily segregated, as in the family, schools, asylums and other such places, an injection of 5 c.c. for children under 10 years, and over that age 10 c.c.. This is thought sufficient to protect for about two months.

In a suspected case of diphtheria administer a full dose of antitoxin. Make a culture at once, and in 24 hours you can tell whether you have the bacillus diphtheria. If not found, discontinue your serum. If found, the symptoms on the following day will indicate the size of the dose. Some give half dose if symptoms are mild, and others give none. If there is no improvement, give full dose during the day, preferably in two divisions, 10 c.c. in the morning and 10 c.c. in the afternoon. If there be found a mixed infection, streptococci with the bacilli, and the pulse, respiration and temperature indicate an alarming condition, you have to give full doses on two or three consecutive days. An ideal remedy would in such cases be an antistreptococci with the antitoxin. The presence of streptococci or other cocci does not interfere with the action of the serum, but the serum does not act on them, or remove the septic influences of the pyogenic microbes. If these poison and degenerate the cells beyond the reach of stimulation from antitoxin, your patient will die of septicæmia and not of diphtheritic toxæmia.

From 89 to 94 tracheotomies gave 85 p. c. mortality, while the serum treatment has not only reduced this frightful mortality half, but greatly reduced the number of cases requiring the operation. Given in time, paralysis, pneumonia, albuminuria are rare complications.

D. Kinyoun saw 82 cases treated with serum in Paris, of which 3 died, making about 4 p. c. mortality. Thirty cases in Berlin during two week's

stay, and he observed equally as remarkable results. The serum was exhausted and there was none for six weeks in August and September. During this time the disease increased the mortality. Out of 37 tracheotomies all died but 5. The following six weeks, with the use of antitoxin, there were only 8 tracheotomies and of these 4 died.

D . L. Emmett Holt has had 20 cases treated with antitoxin up to the middle of April, and all recovered except a baby suffering from marasmus.

My friend Dr. W. T. Pate and myself saw five guinea pigs inoculated with from $\frac{1}{11}$ to 1 c.c. of toxin, giving to three at the same time $\frac{1}{10}$ c.c. of antitoxin, leaving the two receiving the least quantity of toxin as contral. The contral pigs, in 24 hours, were nigh unto death; the other three did not even even get sick. Two rabbits were inoculated with pure culture on trachea and left for 24 hours, when the sickest was given 1 c.c. of antitoxin and the other left as control and soon death controled him, and the other, by the aid of antitoxin, was enabled to gain the victory over death, diphtheria and degeneration.

We did not see it sufficiently tried on patients to express an opinion, but doubting as we were, to us *venit vidit vixit* our doubts. The following is what I have read from a personal letter: "Were I to have diphtheria I would have the serum administered, because I believe it the best agent we now have, remembering it is not a cure-all." Two hospitals in Paris—one not using the serum had 60 p. c. mortality—the other using it in the same epidemic and at the same time had 24.5 mortality, showing a difference of 35 p. c. in favor of antitoxin. Many months ago unbiased observers admitted, and still admit, that the mortality rate has been divided by two since the use of antitoxin.

These are my deductions:

1. It acts as a specific against diphtheritic toxæmia.

2. The earlier administered the better to limit the disease and prevent complications.

3. It does not restore any degeneration produced by the previous work of toxæmia and septicæmia.

CLEAN MIDWIFERY, WITH REPORT OF A CASE OF UNCLEAN MIDWIFERY.

By F. H. Russell, M.D., Wilmington, N. C.

By clean midwifery is meant midwifery not encumbered with anything useless—perfect, complete. Its principles are simple, its practice easy, requiring the virtues, perseverence, patience, thoroughness. Its results are too well known to dwell upon, depriving child-birth of much of its former horror, robbing death of many of its fairest victims, women in the prime of life performing their office of mother and help-mate, the time of all times at which they could least be spared.

History.—This dates from the time when the true pathology of diseases of the puerperium was first properly appreciated, which was the key-note to their prevention and successful treatment. In the time of Hippocrates and Galen the results of unclean midwifery were thought to be due to the suppression of the lochia, this doctrine holding sway for about twenty centuries. This was followed by the doctrine of milkmestassis. These in turn were followed by the doctrines of inflammation of the womb, peritoneum, veins and lymphatics. Many considered it a specific infectious disease, such as typhoid fever. In 1850 Sir J. Y. Simpson published a paper entitled "The Analogy between Puerperal and Surgical Fever," which was the beginning of the modern doctrine. Several years previous to this Semmelweis asserted that puerperal troubles were common in the practice of those who examined patients after performing post-mortems, or students attending patients while working in the dissecting room. He was considered a crank, and was rewarded by ridicule, but with the advance in other branches of medical science, this branch also advanced, and to-day it is an established fact that puerperal diseases are due to germs, either putrefactive or infective. The putrefactive germs are termed bacilli, and depend for nourishment upon some foreign proteid substance, such as blood-clots, pieces of membrane, etc.

Their excreta are called ptomaines, which are capable of absorption by the uterus and are the offending agents. Puerperal troubles due to this cause readily respond to treatment, because as soon as the uterus is cleaned out the supply of ptomaines cease and the organism, with its wonderful eliminating glands, soon dispose of the dose it has. The infective germs are termed streptococci; these possess the power of invading living tissue and are in themselves poisonous. This germ is the cause of the true infective puerperal fever, although the putrefactive germs are found with it. These

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germs must get into the system before they can cause trouble. Their avenues of introduction are seven in number:

1. The genital passages, as by an examination with a septic finger, filthy clothes coming in contact with the vulva, or by the patient's scratching her vulva with a septic finger; it has been said that the water-closet has acted as a source of infection by the mucous membrane of the vulva coming in contact with the foul emanations from the sewer.

2. Wounds of the genital passages.

(*a*) Lacerations of cervix.

(*b*) Lacerations of vagina, the base of the clitoris, is a favorite place for laceration.

(*c*) The perineum.

(*d*) The head lying in one position too long, may cause sloughing of the underlying tissue.

3. The bladder, either introduced by a catheter, or may wander from the vagina; from the bladder they may wander through the ureter into the kidneys.

4. The rectum, as by a septic syringe nozzle.

5. The breast.

6. Respiratory organs.

7. Intestinal canal.

Having seen that there is a germ capable of introduction by the above-named avenues, and knowing the dire results which follow its introduction into the system, it became evident that if the germs were prevented from entering the system the puerperium would be robbed of its dangers. As we all know, this has been demonstrated by clinical facts. The prevention comprises clean midwifery, which involves three factors—the patient, physician or nurse, and the surroundings. The surroundings necessarily depend upon circumstances. It is those in the middle and lower walks of life whose surroundings we must modify. As to the room, it should not be too small; it should be exposed to sun-light, if possible, and be well ventilated. If the bed has been in use long, it should be scrubbed up and sunned. A mattress should be used and all unnecessary clothes. ornaments and furniture should be moved out. For a bed-protector there is nothing better than a piece of oil-cloth, or a piece of canvass which has previously been boiled. The bed linen is put on fresh, and then the bed is ready for the patient.

As to the patient, she should take a thorough bath with warm water and soap. She should have a copious enema of warm water and soap. The vagina should be douched with a 1 to 2000 bichloride solution. She should clean and cut her finger-nails, and when the physician has prepared his antiseptic solution she should soak her hands. She should put on fresh linen; after this an antiseptic pad should be placed over the vulva; one may easily be made by wrapping a piece of absorbent cotton or oakum in sterilized

gauze, and the breasts and axillæ, after a thorough scrubbing with a boric acid solution, are to be covered with borated cotton, kept in place by a sterilized binder.

As to the physician, his hands and arms should be prepared as follows: Nails cut and cleaned, hands and arms scrubbed by means of a brush with hot water and soft-soap, then washed in plain water, next immersed in a hot bichloride solution, 1 to 2000, in which they should remain for three minutes; if they are simply rinsed it does not wet the several layers of dry, horny scales which form the stratum corneum of the epidermis, beneath which the germs may hide and remain unhurt. The hands should be allowed to dry—never use a towel; next they should be immersed in a 5 p. c. solution of creolin, remaining for one minute. This is antiseptic and lubricant; in the lying-in hospital of the University of Maryland the rules relating to the time were very strictly observed. Some claim that it is unnecessary to use bichloride, soap and water being sufficient, but for the busy practitioner, who makes, possibly, a rectal and vaginal examination of one patient, lances a felon for another, is then summoned to a case of labor, for the benefit of his patient he should use bichloride. I mention bichloride because it is the neatest, least troublesome and among the best antiseptics. An apron should always be worn, pinned to which should be a sublimated towel, which is useful. In this connection it is well to remember that failure to carry out the minutest details in antiseptics may lead to disasters of the greatest magnitude. Remember the old expression, "*omnia ex ovo.*" Vaginal examinations should be as few as possible. The third stage of labor should be carefully managed or clean midwifery may fail. In those cases where it becomes necessary to separate the placenta from its attachment or in any way interfere with its delivery, it should be carefully examined to see if any part has been left. At the end of the third stage a hypodermic of strichnine-nitrate, one-fortieth of a grain, should be given and a nose of ergotole or fl. extract of ergot.

The strychnine tones up the muscles, acts as a general stimulant and lessens the shock which necessarily follows labor. Ergotole insures better contraction of the uterus, thereby forcing out all clots which otherwise might be retained and become infected. This is more important in multiparæ, as with each succeeding labor the uterus becomes more inert. During the interval between the second and third state of labor sterilized gauze, wet with an antiseptic solution, should be kept over the vulva. After a normal labor it is unnecessary to use an antiseptic douche, as the placenta wipes out the canal, and this is followed by a douche of blood from above.

Nature's Antiseptic Fluid.—In many cases in which the strictest antiseptic precautions have been observed we will have fever, temperature 100°, but it will be noted that the patient is cheerful and does not feel sick; this is Volkman's aseptic fever, due to the absorption of blood serum. The nurse

should prepare her hands just as the physician, except the creolin solution; this should be done each morning before making the patient's toilet, and if she has occasion to touch the cord she should be careful not to hand the mother a cloth before cleansing her hands, or otherwise convey germs to her.

Van Horn and Ellisou, Park Avenue, 41st Street, N. Y., prepare an obstetric case which constitutes a valuable armamentarium; it consists of 2 sterilized bed-sheets, 4 doz. sterilized vulva pads, one 4-qt. douche bag, with glass nozzle, 1 zinc douche pan, 2 sterilized mull binders, heavy, 5 yds. sterilized gauze, 1 yd. 10 p. c. iodoform gauze, two 3-inch heavy mull bandages, sterilized, 1 lb. sterilized abs. cotton, 1 sterilized nail-brush, two 12-inch papier-mâché basins, rubber sheeting, 1¼ yds. by 2 yds, rubber sheeting, 1¼ yds. square, rubber on both sides, safety-pins, 2 ozs. carb. vaseline, 4 ozs. powdered boric acid, 4 ozs. 50 p. c. carbolic acid solution, 2 ozs. green soap soiution, 2–100 grms. chloroform, 1 oz. f. e. ergot, 1 small bottle bichloride tablets, 1 small bottle sterilized tape.

The physician should always see that the breasts are properly cared for during the last weeks of pregnancy, the nipples should be washed in a solution to harden them. Listerine and alcohol, equal parts, answers the purpose, gently drawing them each day also prepares them. Mammary inflammation is preceded by infection of the nipples, as a fissure or excoriation of the nipple; this can be prevented by keeping the nipples clean, using a weak solution of boric acid just before and after nursing. Attention to the cord also comes in the domain of clean midwifery. I always treat it as if it were the stump of an arm I had amputated. Wash it off with plain water, then dust with iodoform and put on iodoform gauze, 10 p. c., over this a piece of borated cotton, then the bandage. This need not be opened in four days. Equal parts of acetanilide and boracic acid and carbolized gauze would probably do as well, and be more pleasant to those around.

A Case of Unclean Midwifery.—The majority of troubles after child-birth at the present time, we might say, are caused *directly* by the ignorant granny of to-day, about which enough has been written, and *indirectly* by germs. For this reason the young physician is called upon to treat most of the unclean midwifery, as his practice is largely among those who are dependent for treatment upon midwives.

Case.—Mrs. C., American, married, age 32 years, was delivered of her fifth child, a boy, weighing about seven pounds, December 3d, 1894, after a short and normal labor—a midwife officiating. On December 6th says "she had a chill but no pain." December 7th chill and general pain. I was called in December 8th—respiration 28, pulse 140, temperature 105°, countenance very anxious, vomiting frequently, complete anorexia, tongue heavily coated, tympany marked, tenderness over abdomen, offensive diarrhœa.

Treatment—No anæsthetic given. She was put on a table, the external genitalia and surrounding parts were scrubbed with pearline, the vagina

washed out with a 1 to 2000 solution of bichloride. The instrumeuts having been sterilized, the patient being on her back, an Edebohl's speculum was introduced (this is preferable for this class of work, as it is self-retaining); the uterus pulled gently down with a Skene's tenaculum, the entire inner surface carefully scraped with a curette; a small quantity of decomposing blood-clots was scraped out; involution had not begun and the organ was very tender. An intra-uterine douche of 1 to 3000 bichloride solution was given, continuing until the solution came away clear. Then the cavity was packed lightly with iodoform gauze, 10 p. c.

I think this a very important part of the treatment. It acts as (*a*) drainage; (*b*) hæmostatic; (*c*) stimulant—it stimulates the uterus, causing contraction, thereby promoting involution—(*d*) it is a good mode of applying a reliable antiseptic to the uterine cavity; (*e*) if there is a pus-producing surface at the late placental site, by its antiseptic aud stimulating properties it sets up healthy action; (*f*) it aids in the production of a hasty convalescence; (*g*) it prevents endometritis, salpingitis, ovaritis, uterine displacements, leucorrhœa, etc., from following in after life.

The introduction of the gauze is greatly facilitated by the use of a Polk's applicating speculum. By its use the irrigation is better done.

The vagina was then washed out with bichloride solution, 1 to 2000, and packed with iodoform gauze and an antiseptic pad applied to the vulva. While the treatment was being carried out the bed-clothes were changed, all uunecessary furniture and clothes were removed and one quart Platt's chlorides sprinkled around.

December 9th respiration 23, pulse 90, temperature 99°; elixir iron, quinine and strychnine ordered three times a day, with milk-punches.

December 10th, respiration 22, pulse 84, temperature 98½; vaginal gauze removed and fresh introduced.

December 11th, respiration 22, pulse 80, temperature 99°; vaginal and uterine gauze removed and a carbolized douche given and an antiseptic pad re-applied. Recovery continued uninterrupted.

Other cases illustrative of this plan of treatment might be reported, but I deem this sufficient.

DISCUSSION.

Dr. Booth had noticed one sentence which was not in the paper, but which was inserted, as he heard, that he had been in the habit of giving $\frac{1}{40}$ grain of nitrate of strychnine to make the uterus contract. That seemed very good treatment, but he said he would give it in even larger doses after hearing the discussion this morning. The giving of strychnine in these heroic doses is going to get somebody into a scrape. We must not forget that we may meet a patient who cannot stand such large doses. He related the following case: He had been called to see a bad case of typhoid fever. The patient

was nearly dead, having had hemorrhage. The physician who had called him in consultation wanted to give $\frac{1}{20}$ of a grain of strychnine under the skin, and did so. In less than a half hour the fellow had a convulsion and died right there. Some people can take more strychnine than others. He would have given this fellow $\frac{1}{30}$ of a grain, and, if necessary, after awhile have given him another $\frac{1}{30}$. It will not do to give these heroic doses of strychnine.

Dr. Faison rose to say that they were talking of cases where there was absolute necessity to do something, not where there were two or three weeks for treatment, but in cases after post-partum hemorrhages. In such another case as the author had given he would not hesitate to give $\frac{1}{10}$ of a grain of strychnine; in a case of post-partum hemorrhage he would not hesitate to give $\frac{1}{10}$ of a grain of strychhine at one time.

Dr. McMullan said that he would not give a patient more than $\frac{1}{20}$ of a grain the first time, and if he was not better in a half hour he would give another dose.

Dr. Sykes said that a great portion of the audience were young men and some of them might make a mistake. In a case which he attended he gave $\frac{1}{60}$ of a grain and she had convulsions from 10 in the morning till 12 at night. It was a case of abortion, but not such as had been described in the morning. It was his candid opinion that the young men of the profession had better be very careful about giving $\frac{1}{10}$ of a grain of strychnine. He had seen a case in which 2 grains of morphine were given in doses of $\frac{1}{4}$ of a grain at a time, which was repeated until relief came, which was forever, for he went to sleep and never waked again. He appealed to the young men of the body to give these potent drugs in small quantities. If large doses are given and the patient lost, then the reputation is lost, and a reputation lost cannot be builded again. Be careful until your reputation is established, so that the death of your patients will not damage it.

Dr. Burroughs thought that he had used it as freely and in as large doses as any man in the State. He meant nitrate of strychnine. He had had Parke, Davis & Co. make him some tablets $\frac{1}{16}$ of a grain and some containiug $\frac{1}{8}$ of a grain. He had treated probably several hundred patients with strychnine, giving it twice a day, until he had gotten them up to about $\frac{1}{8}$ of a grain twice a day. He got stimulation of heart from it, and had never poisoned a patient. These doses were not given hypodermically.

Dr. Haigh wished to render his personal thanks to Dr. Sikes for his speech, advising cautiousness in the use of drugs. Had he been a jury and the man brought before him, he would have found him guilty of murder. There has been no better suggestion made at this meeting than that they should be careful in giving these potent drugs.

Dr. Kent was glad of this discussion. He had used nitrate of strychnine, and could honestly say that no man in the audience had been more cautious

in his administration of it; if he had ever erred it was because of fear of giving beyond what he thought was safe. He had never given in the beginning more than $\frac{1}{20}$ of a grain. Sometimes he gave $\frac{1}{16}$, but the safe way is to give little except in the extremest cases, where the life of the patient is ebbing away quickly, then they are warranted in using heroic doses. Where there is time for small doses, give them, by all means; it is a valuable remedy. Dr. Mays suggests $\frac{1}{20}$ of a grain to begin with; I suggest $\frac{1}{60}$, and give that as you see necessity for it; or, in extreme cases, begin with $\frac{1}{20}$ of a grain and repeat that if you see no effect.

AN OBSTETRIC RESOURCE AND NECESSITY.

By J. R. Irwin, M.D., Charlotte, N. C.

In 1893 I contributed an article to *The Charlotte Medical Journal*, on rectal njections in obstetrical cases, and, after a still more extended use of them, am more convinced than ever of their utility and necessity in such cases.

While parturition is a natural process, yet, in civilized life, the woman needs some assistance, and every attention that will contribute to her comfort, facilitate labor and assist to effect the safe conduct of the paturient woman, is one of the great objects of medical practice and the obstetric art. And although labor is a natural process, it is safe to regard every parturient woman exposed to dangers and complications which may imperil her safety.

From the casual way in which enemata are recommended by authors and writers on obstetrical matters, only suggesting their employment "in case the bowels have not acted," we would naturally infer that they are of little consequence. And if the practitioner relies upon what the patient says in regard to condition of her bowels, he will rarely meet with an indication for their use, for she almost invariably says that her bowels have acted previous to or since the beginning of labor. Perhaps this may be correct, but few women escape during the last weeks of pregnancy from an accumulation of fecal matter, which, in some instances, is enormous in quantity, and what they call regular action may be associated with very imperfect removal of the contents of the bowels. Therefore most women need them to relieve this condition, and rectal injections should be one of a series of attentions that the physician should give his patient. By so doing he not only relieves a slight mechanical impediment to the process of labor, but he thus prevents the involuntary defecation that so often takes place with the last expulsive pains, to the mortification of the patient and utter disgust of the attending physician.

Another advantage to be secured by a thorough evacuation of the contents of the bowels is, wounds of the fourchette or slight perineal lacerations are not contaminated with fecal matter, and subsequent infection from this source is thus avoided. Recently I read an account in one of the medical journals of a case of peritonitis, which began as an endometritis, caused by the presence of the bacterium coli commune, the inflammation extending through the intermuscular connective tissue of the uterus to the parametric tissue, and thence to the peritoneum. Hence another indication for the thorough evacuation and cleansing of the bowel. Of course the genitalia should be bathed with an antiseptic solution after each movement from the bowels.

There is one point that should be emphasized. When a woman passes

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through the act of parturition with accumulations in her bowels and enters the puerperal state with a distended intestinal canal, the bowels continue sluggish. In some instances I have no doubt that the retained feces produce an intestinal irritation which may be continued to the serous coat and may assume the proportions of peritoneal irritation, and even that of acute peritonitis.

Perhaps you all have noticed the tardiness with which even slight wounds heal, if the excretory processes are not going on freely. A mere scratch, abrasion or sore will be several days healing under such circumstances, and because of an altered state of the blood, consequent upon constipation, and it is a well-known fact that constipation may derange some of the most important organic actions. The circulation of azotized matter, nitrogenous waste, excretory substances, which hepatic and intestinal activity should eliminate, makes the earlier steps of digestion impossible. Improvement after purgatives illustrates the dependence of all the functional activities of the body on the prompt removal of accumulated excretory matter. These patients, if not already suffering from indigestion, are in a condition to suffer from its effects, and indigestion does not mean alone the defects in gastric and intestinal reduction of food, but also the perversions of absorption, assimilation and excretion, with the morbid states they create, and are causes of not only functional disorders, but secondary pathological changes in various parts of the body. And the toxines of the blood may render the uterus and appendages more vulnerable to germs which may be present, and as there is congestion of all the parts concerned in labor, the tissues are rendered more susceptible to any germs present.

Bacteriologists have discovered that normal blood is antagonistic to germ life, and is the sentinel, constantly on the alert to guard the citadel of life. Impoverished blood, which lacks some of its normal elements, or is surcharged with abnormal or foreign ones, furnishes a favorable nidus or culture-ground for the development of disease germs. Many of the ailments of childhood are due solely to imperfect action of the bowels, which we often see completely relieved by the administration and action of a purgative. And gynecologists tell us that coprostasis may give rise to pelvic troubles, such as metrorrhagia, dysmenorrhœa, etc. And in everday practice we see cases of constipation, where the liver has become clogged with the effete products of metabolism, and the retained nitrogenized material perhaps causing a rise of temperature, and other symptoms. Whether this is true or not from a pathological standpoint, it is certain that treatment based on this reasoning is often gratifying in the highest degree.

All obstetricians advise attention to the intestinal functions immediately after delivery, which is well, but thorough evacuation beforehand is better. In all operations of selection surgeons advise that the bowels be opened by purgatives or enemata as preparatory treatment. Thus we see the impor-

tance of attention to the condition of the bowels at this time, and if a physician is engaged to attend a case of labor he should give minute instructions in regard to this matter, so as to avoid constipation, and he should not fail also to administer a rectal injection after being called to the case.

What has been said, so far, relates to the employment of rectal injections to aid in securing the best possible condition in which the woman should pass into the puerperium. There is another use for which I wish to recommend them, and which, so far as I know, has never been suggested except by me, to accelerate and increase the expulsive character of the uterine contractions, render them more efficient, and thus expedite the delivery of the child.

Women, especially primipara, at the beginning of the second stage of labor, frequently hesitate to exert abdominal contraction, fearing that this will increase their suffering. This acessory force of the pains, the abdominal pressure, which acts upon the progress and expulsion of the child, may be regulated by the will, and in the effort to evacuate the bowels sets in voluntarily. In such cases a most excellent effect was observed after the injections, the ecbolic action showing itself in from twenty to thirty minutes, and nearly always lasting until the birth of the child; the contractions being regular, strong and free from any tetanic tendency. Sometimes spasmodic contractions of the external os, where the upper part of the uterus has not manifested power enough to overcome the resistance, the injections increase this power, the so-called spasm ceases and the os opens. Very often, prior to complete dilatation of the mouth of the womb, feeble contractions are observed, before or after the rupture of the membranes, and this defective uterine action may have characterized the labor from the beginning, or after hours of unproductive uterine action.

So that, besides the indirect action in labor of the abdominal muscles and the diaphragm, brought about by the use of injections, the direct action of the uterus is increased and its expulsive efforts made more efficient. This action is due to a reflex irritation of the terminal nerves of the bowel, which is communicated to the connecting fibres of the ganglionic or spinal nerves, and thus conveyed to the uterus, it contracts reflexly.

Frankenhauser says stimulation of the hypogastric plexus causes contraction of the uterus. The fibres arise from the spinal cord, from the last dorsal and upper three or four lumbar nerves, run into the sympathetic and then reach the hypogastric plexus.

Basch and Hoffman say that stimulation of the sacral and lumbar parts of the cord causes powerful uterine movement. As the parturition centre and the centre (Budge's) controlling the act of defacation are situated in the same part of the cord, in close proximity, and during labor the reflex activity of the spinal cord undergoes augmentation and the irritability of the uterus is increased, it is not unreasonable to suppose that rectal injections of a saline

solution may stimulate uterine action. Laying aside theories in regard to the matter, and after an extended use of them and observation of their action, I am convinced that it is a clinical fact.

Another advantage and use: In exceptional and occasional cases of post-partum hemorrhage transfusion of saline solutions are practiced to aid in a mechanical way and even to excite the circulation. By the administration of rectal injections of a saline solution this necesslty, if not prevented, is anticipated. Because a considerable amount of it is absorbed, as is evidenced by the thirst experienced, and this, together with the fluid imbibed, fulfills the indications for transfusion.

In regard to the method of administering rectal injections very little need be said, for most of the gentlemen present are familiar with the procedure. The solution I have been accustomed to use, as stated in the outset, is chloride of sodium (common salt) from one to two ounces to the quart of water. The temperature of the water should be about 98° to 100°. Though I have had splendid results from cold water, the warm water is usually more acceptable to the patient.

Place warm rubber sheet under the patient to protect the bed, and put her on the left side with the knees flexed. It is necessary that the fluid be introduced slowly, the operator stopping for a time whenever the patient feels contraction coming on, and a cloth should be pressed against the rectum to assist in retaining the water. If the bowel is only gradually distended, two pints or more may be intro uced before reflex action is excited. During this contraction the water is prevented from passing off by the voluntary efforts of the woman, together with the descent and impinging of the womb against the rectum, and then travels in an upward direction, that is, antiperistalsis is brought about, which empties the rectum and fills the colon. As soon as the pain passes off the injecting process is resumed until the return of another pain. Often a considerable amount of water may thus be injected, insuring a thorough evacuation of not only the rectum, but entire colon, together with the stimulating effect upon uterine action by sympathetic reflex action.

When labor is too far advanced to permit the woman to use the commode, the bed-pan can be placed under her. To sum up:

1. Rectal injections are indicated in labor to remove a mechanical obstacle to the progress of labor.
2. To prevent absorption of excretory matters into the blood.
3. To prevent local contamination of fecal matter and germs.
4. To anticipate the necessity for transfusion of salines in case of hemorrhage.
5. They may be used as a co-efficient in increasing uterine action and acceleratiug delivery.

In conclusion, if any apology is necessary to the members of this Society for calling their attention to this subject, and if rectal injectious in labor are regarded of minor importance, let me remind you that "He that is faithful in that which is least, is faithful in that also which is much."

SCARLET FEVER.—A BRIEF HISTORY OF THE DISEASE, WITH CONCLUDING REMARKS ON THE DISINFECTION OF PATIENTS, BEFORE THE COMPLETION OF DESQUAMATION.

By Thomas R. Marshall, M. D., Bedford City, Va.

This exanthematous fever, so called from the color of its eruption, is remarkable for the wide diversity which it presents in different cases as regards symptoms and fatality.

Probably no disease has received a larger share of attention at the hands of clinicians and pathologists in the last few years but what its intricacies, especially with reference to its ætiology and immunization, has been more definitely cleared up than that of scarlet fever. The most able observers in regard to its ætiology testify to the difficulties which surround them when they seek to explain the problem involved. Certain facts, however, have come to our knowledge of late years which seem at first sight to justify very important conclusions as to the real ætiology and nature of this disease, and to indicate fresh lines of treatment as at least affording some chance of increased control over its mortality. It would serve no useful purpose here, were I to review and endeavor to reconcile the results of recent investigations, for they are well known to all physicians who are aquainted with current medical literature. I will therefore content myself with reviewing in a somewhat cursory manner, the more salient points of interest connected with this malady.

We probably owe the recognition of scarlet fever as a distinct disease to Sydenham, before whose time it was confounded with measles. Clinical statistics were then collected, which resulted in its being classified as a distinct disease, with the general division of, Simple and Malignant, but subsequently the latter division was subdivided as the variety of symptoms presented were recognised. While there have been numerous collaborations to this subject, from the olden times to the present day, comparatively little has been accepted by authors which would materially change the original ideas, so that in this field alone remains ample ground for scientific research and investigation.

Scarlet fever, we know, occurs sporadically from time to time and then under unknown conditions becomes widespread, producing epidemics, which vary greatly in severity. In its mildest form it is a trivial affection, seldom requiring medical treatment, but in its severest form there are few diseases more appropriately styled malignant.

The real ætiology of scarlet fever we at present do not know, but the communicability of the disease is established by irrefragable proof, and it is probable that its causation always involves a contagion. The contagion is contained in emanations from the body, both in expired breath and the cutaneous exhalations, hence the atmosphere surrounding the patient is infected. It is also certain that the disease has been communicated by innoculating with serum contained in the vesicles which sometimes appear in conjunction with the cutaneous efflorescence, but such innoculation according to "Flint" does not materially affect the duration or the severity of the attack. The contagion may be carried in the clothes of physicians, nurses and otheis, in fact, clothing and bedding, which have been put away for years have been known to retain and communicate the contagion. Facts go to show that contagion adheres preferably to material substances. Several instances have been recorded in which scarlet fever virus was transported by milk. Probably the most important of these was the epidemic in London in 1885, an investigation of which by Power and Klein, proved the cause due to milk, obtained from a dairy at Hendon about five miles distant. Scarlatina also, sometimes follows surgical operations and the puerpueral state. In these cases, however, desquamation is no criterion as it occurs whenever hyperaemia of the skin persists for any length of time. The period of incubation is undoubtedly, as a rule, much shorter in scarlet fever than in other eruptive fevers. Trousseaux cites a case in which the attack took place within 24 hours after exposure. It is probable however that the period of incubation averages from two to six days. One attack does not always confer immunity from the disease, as many as three attacks having been verified. Attempts to absolutely determine the specific germ of scarlet fever, have so far proved ineffectual. Streptococci are sometimes found in the blood and in fatal cases are found in the lymph glands and in the kidneys. It has about been determined that Loefflers bacillus of diphtheria, does not exist in the pseudo-membrane in the throat, however, Klebs-micrococci "the-Monos-scarlatinosum" may yet prove to be the poison. In the pathological anatomy of scarlet fever, we find an acute inflammation of the skin, with exudation—a a true dermatitis. A glandular change in the glandular structures, most marked in the Peyerian glands, although also occuring in the stomach and kidneys and in all of which, streptococci are found abundantly. While the symptoms presented in scarlatina are familiar to every practitioner here present, it will be well for the sake of completeness to run over briefly the most characteristic ones met with in what might be termed a typical case. Onset sudden, with decided chill, and sometimes vomiting (in infants, convulsions), pain in throat followed by high fever soon reaching 105° a rapid pulse, 110 to 140 being common. At the end of 24 hours a bright red scarlet rash appears on the neck and chest, spreading over the entire body within a few hours. The eruption is not raised; there is no intervening healthy skin,

and scattered irregularly are points of darker hue. With the appearance of the eruption, occurs burning heat of surface, burning in the throat, and difficulty in deglutition. The throat on inspection presents the appearance of catarrhal inflammation. Tongue at first furred, later red with prominent papilla. There is also headache, restlessness, and severe cases dellrium. Diarrhœa is also common. On the fourth or fifth day fever declines by lysis, the eruption fading, and on fifth or eighth day desquamation begins, continuing for a week or more, the convalesence being slow, the patient emaciated and pale. In the other varieties, however, these symptoms are materially changed. There are few of us who do not appreciate the importance of a case when in addition, there is great inflammation and swelling of the pharynx, nose, palate, tonsil and neighboring glands, causing difficulty of respiration and deglutition, and I trust there are still fewer of us, who do not appreciate the gravity of the case when the nervous phenomena presented are associated with convulsions, delirium and muscular twitching; temperature reaching 110°, pulse rapid, feeble, and irregular; eruption delayed, of a purplish color and in patches. Such cases strike terror to the tender maternal heart and strongly appeal to us to act, and act conservatively. As to the diagnosis of scarlet fever, a case presenting to a reasonable extent the typical symptoms should cause no error, and with these an early scarlet eruption followed by desquamation should clear up all doubt. The prognosis of scarlet fever, of course depends upon the character of the attack. We can never be postive of the result. Mortality varies from 10 to 25 per cent. Of an enormous number of fatal cases tabulated by Murchison over 90 per cent. occurred in children under 10 years of age. The treatment of scarlet fever as with other eruptive fevers, is at present symptomatic, however judiciously applied. There are no specific remedies by which the disease can be arrested or even markedly controlled. When the germ has been definitely recognized and isolated and the remedy found which will produce its certain death then the profession will have another boon similar to the treatment of diptheria with antitoxine. By far, I think the most important treatment (outside of a judicious symptomatic one) is the prevention of its spreading, or disinfection of patients before desquamation begins. On this point, I can say nothing more fitting than to quote Dr. Gibson's opinion as published in the Practitioner for July 1894. He believes it to be the received opinion in regard to scarlet fever, that until deaquamation ceases, contagion is still paesent. From the long period this process occupies in many cases an inconvenience and irksome toil and trouble therefrom arising to families in private practice, Dr. Gibson, was led to investigate the correctness of the common opinion and to ascertain whether or not sufferers from this disease might not by some method of cleansing or disinfecting be freed from the contagion before the process of desquamation was completed. In every case he has found the means used successful. The method adopted is simple enough. It is to give a succession

of three or four (generally not more than three) comfortably warm baths sometimes daily, at others on alternate days, using freely carbolic soap and washing the patient most thoroughly. After each bath, except the last, the patient was put back to the bed on which he had lain with the disease; and after the last he was taken from the bath into a clean room, there dressed with clothes free from infection and allowed to mix with the rest of the family. Any patient with a complication such as otitis, ulcerated or suppurating throat was not subjected to the process. The first case in which he tried the experiment was that of his own son who had contracted the disease at school about 18 years ago. The case was of the ordinary kind, but for ten days the fever ran high and the eruption was copious. He was isolated with every practicable precaution in his father's house; all the other members of the household remained at home. About the end of the third week he was fairly well and was then subjected to the process of cleansing and disinfecting described and after the third bath was allowed to mix with the other members of the family consisting of eleven individuals, six of whom were children, and none of whom had ever had the disease. The result was that one took it. In his case desquamation went on for three weeks after he was allowed to associate with the others. Since then Dr. Gibson has frequently made similar experiments with like results. The circumstances in different cases varied, in so far that in some the other children of the family in which the disease had broken out, were removed and were brought back as soon as the infected member and the house were cleansed and disinfected. In other cases where the house was large enough and where isolation could be fairly well maintained the other children remained. In some other instances again the infected member was removed and brought back to mix with the others as soon as he was disinfected. In none of the cases experimented on was desquamation over when the disinfecting process was applied, and Dr. Gibson had an opportunity of observing its continuance in a number of cases after disinfection had been effected. In several cases desquamation went on for weeks afterwards. Whatever, therefore, be the connection between desquamation and the infectious micro-organism, the union is not so intimate but that the latter may be destroyed or rendered innocuous by a simple process of cleansing after the second or third week of the disease. In no case did any complications follow the cleansing process; indeed, in all the cases convalescence seemed to him to be hastened, rather than retarded. In all cases every effort was made to keep the patient in bed until disinfection was accomplished. In most cases anointing the body twice daily with olive oil mixed with some disinfectant was employed. The length of the period from the commencement of the disease until the disinfecting process was begun varied slightly, according to the health of the patient. In some cases it was begun immediately after the second week; in others it came at the end of the third week. The use of the bath as a means of treatment in scarlet fever has

been recommended and practiced often enough; but it has not been stated, at least, to the writer's knowledge that the application of bathing with a disinfectant might destroy the contagious principle, or render it innocuous; at such an early period of the disease, as between the second and third week and before desquamation was completed, or that after the application of it in the manner described patients might be at liberty, even though the process of desquamation was still progressing, to mix with the healthy without risk of spreading the disease. Should this simple process of cleansing or disinfecting scarlet fever patients so early in the course of the disease, or as soon as convalescence is established, prove generally successful, the advantage to private families would be very great. The maintenance of isolation and other prophylactic means in private houses, for four to six weeks, when the patient to all appearances is fairly well, is often effected only at great inconvenience and is a trying hardship to patients and relatives. If the period could be reduced, to two or three weeks without risk of communicating the disease, even though desquamation was going on, the relief to all concerned should be correspondingly great.

DISCUSSION.

Dr. Hines thought the only way to disinfect after scarlet fever was by carbolic baths. Believing as he did that the epithelium drawn off from the patient carries the disease with it, he did not think the patient ought to leave the room until thoroughly disinfected, and the way was to give him baths with carbolic soap twice a day in warm water. He never allowed any of his patients to leave the room until thoroughly disinfected, though he knew some did without any bath at all and within two or three weeks and sometimes in less than ten days. He believed in taking every precautian, though it is a hardship to the patient, it is one they ought to submit to.

THE THERAPEUTIC USE OF TOBACCO IN PARESTHESIA WITH REPORT OF A CASE OF PRURITUS HIEMALIS.

By S. J. Montague. M.D., Winston, N. C.

The term paresthesia is used to cover a vast number and variety of perverted nerve actions, the symptoms of which are mostly subjective and the kind and number founded only by the limititations of sense and speech. Its manifestation may be general or local or both, and it taxes the ingenuity and patience of the physician to try to explain the symptoms to the sufferers. Numbness, pain, heat, cold, distention, constriction, formication, itching, melancholy, precordial, distress, hunger, thirst etc., are some, and some only of the symptoms of this disease, the pathology of which is obscure and the anatomical lesions if any, not apparent to present modes of observation. It is supposed that these paresthetic sensations arise from some disturbance of central nervous organs and are referred by the consciousness to the affected parts, thereby taking cognizance in the particular individual of the weaker points in the life "plant." This gives indications for treatment viz: That therapeutic agents for their relief must first effect the nerve centre controlling the affected part. Astoundingly large numbers of people are suffering in this way, and they seek relief too often in vain, from physicians who frequently fail utterly to appreciate the condition, thereby losing patients, bringing the profession into disrepute and turning the sufferers over to unconscionable advertising quacks and swelling the ever-increasing number of habitues of the various popular narcotics. We know nothing so well as what we learn from personal experience—what we suffer in our own selves.

For fifteen years I have suffered every winter with varying degrees of intensity with that form of paresthesia known as Pruritus Hiemalis or severe itching, prevading the entire cutaneous surface, with the exception of the neck, head, hands and feet and organs of generation. The itching was at pure neurosis, entirely free from the slightest inflammation or lesion excep the accidents of agents sometimes too vigrously applied for relief—as for instance, the finger nails, stiff brushes etc. It would gradually disappear with the advent of summer and reappear year after year contemporaneusly with cold weather. I consulted many books and physicians and tried many remedies with at best, only partial and temporary relief. Regular attention to the bowels and keeping the stools loose did some good. All sorts of changes and alterations of diet, as to kind and time of taking and quantity and quality were faithfully tried—absolution from animal diet seemed beneficial for a time and then of no use. My main dependence was a good rubbing all over with a stiff flesh brush just before retiring and this enabled

me to get good rest of nights for several years, and the itching fortunately only troubled me at night. At last the brushing began to lose its power and I added to this, inunction of carbolized sweet oil, and then, although this was quite troublesome and not without decided objections as to my toilet, I was happy for a while, thinking and hoping that I had found a remedy. This hope was doomed to disappointment for the good effect only lasted a few weeks. Various sorts of benumbing liniments such as aconite etc., were tried without good results, all things considered. Thus far, my special drug therapeusis had been directed against the periphery by topical remedies, with such unsatisfactory results and the distressing pruritus with the attendant loss of sleep, so harassed me that I was at a loss as to what to do. I was loth, for evident reasons, to begin the use of drugs acting on or through the nerve centres, though the vague theories as to the cause of the disorder pointed to therapeusis through this channel. Acting on this suggestion several, such as chloral, opium, actanilide, cocain, sulphonal and others were tried on nights when the itching was particularly severe, but the evil effect of all these, far more than balanced the good obtained and almost in despair I began to seriously consider a change of residence to a climate that was warm all the year round. In this state of mind, wandering over the fields of therapeutics, bellodonna suggested itself to me but on account of its very poisonous and persistent qualities I declined to try it, and its congener tobacco, then presented its claims, and was accepted for trial. I was not accustomed to it. If I had been that would of course have excluded it: so I began therapeutically to smoke one or two cigarettes just before bed-time and to leave off other special remedies. The effect was all that I could desire, all good and no bad. The pruritus yielded to the remedy carried to its physiological effect, i.e. a slight feeling of the peculiar effect of tobacco, too common to need description. I soon gave up the the cigarettes, preferring cigars but I do not think the manner of using the tobacco would affect the result, I only know this; that since I began the use of it in mid-winter I have not been troubled *at all* with the pruritus. Used *therapeutically* as I have used it, it has promoted digestion and taken the place of aperients which before I had to use almost daily. It has soothed the distressed nerves and in all these ways is a God-send to me. Whether this good effect will continue, I of course cannot tell. I am afraid to abuse the gift and so will only use it as I would other of our armamentarium.

DISCUSSION.

Dr. Faison had an interest in the paper from a personal stand-point. He had suffered with the disease for fifteen years and had never found anything to benefit him in any way. Up to eighteen months ago he had been a cigarette fiend and had never had any benefit from it and was still suffering as much as ever.

Upon being asked by Dr. Duffy if he was using tobacco at the time the disease came on, he said that he used it all the time.

The paper had stated that one habituated to the use would not be benefited.

The following sovereign remedy was given for the disease:

The free application of glycerine to the surface continued for two or three weeks would effect a cure.

REMARKS ON THE TREATMENT OF TYPHOID FEVER.

By E. F. Strickland, M.D., Bethania, N. C.

The subject to which I direct your attention, namely, "Remarks on the Treatment of Typhoid Fever," is very, very old, yet ever new and of the keenest interest to every painstaking, conscientious physician throughout the length and breadth of our land.

And why? First, because typhoid fever is found wherever man has set his foot; second, it is the scourge of active manhood and womanhood; third, the specific for its cure has not yet been found.

These being the facts, I am sure you will not expect an apology nor think me obtrusive when I call your attention to this important subject. The prevaling type of fever in North Carolina to day is typhoid rather than malarial. In the immediate section in which I live, thirty or forty years ago the now indefinite term, "the feavor," was more definite and used synonymously with "the chills" which signify intermittent or remittent malarial fever. Then, too, malarial poison was responsible for or associated with almost every other malady to which our country was subjected. We had "malarial dysentery, malarial neuralgia, malarial asthma" etc. Now that our country is better drained and more largely cultivated, the influnenc of the miasm has been reduced to a minimum in some sections and rendered less virulent altogether. Typhoid is the malignant fever which infects our climate and threatens her people and baffles the skill of her physicians. It is a disease whose primary pathological lesion is in the bowels, hence the appropriate English name *enteric fever.* This fever is essentially the same in all countries and is caused by a specific germ being introduced into the body from without and designated the *bacillus typhosus.* Drinking water and milk are the chief media of transmission though it may be conveyed through the inspired air. Reaching the intestines, these bacilli find lodgement in the solitary and agminated lymph glands; colonies are formed, and the chain of pathological changes so hazardous to our patient begins. This specific germ does not *per se*, operate outside of the intestinal tract, except accidentally introduced through ulceration, but, as is the case in the growth and existence of all bacteria, soluble toxic products, largely the simple excretions of these organisms, are produced, taken up by the lymph and blood and the whole system thus saturated with the poison. Now are developed all of the characteristic symptoms peculiar to this fever and called the "typhoid state."

The question arises, is there any means at our command by which this fever may be aborted or an attack greatly modified in character or mitigated in severity. The plan of treatment that I propose to describe to you is one

that I have adopted after a perusal of some of the leading hospital statistics and a careful study of the clinical observations of the leading authors. My personal experience in treating this fever extends over a period of eight years and the very small death rate that has fallen to my record, from the large number of cases treated, gives me unyielding faith in certain therapeutic measures which I treasure.

But before proceeding further I want to say a few words in regard to feeding and nursing, than which there is no more important subject under Heaven, in this connection.

As soon as the diagnosis is made, the *mildest* as well as the *severest* case should be kept in bed from the begining to the complete convalescence. The room should be large and *well* ventilated both day and night, and perfect quiet enjoined on those in attendance. All visitors should be excluded. The bed and body linen should be changed every day. Now these rules are very few and likewise simple, but often neglected and abused. Just here recurs to me a fatal experience that befell a patient of mine in the summer of 1888. Miss L——. age 55 years. Third week in typhoid fever. I had neglected no detail in regard to the management and care of the case. On arriving at her house, five miles distant in the country, on a regular visit, imagine my surprise and greater discomfort at seeing the yard bordered with horses and conveyances and the house and yard thronged with people. I felt certain that my patient was dead, and that they were preparing for the funeral. In the last I was right. As I entered the sick room I met the preacher, having just baptized the patient, uttering these words, "Put your trust in the Lord, He is the Great Physician," and the waman quite delerious. She went into a state of collapse and died in a few hours. The family was ignorant and superstitous, and one of the humblest of the number put her finger significantly to her head and said: "Doctor, don't blame us for we are all a little teched." The blame rests on that preacher who is certainly very deficient and will be found wanting in God's balances, if he has'nt more religion than common sense. But excuse this digression and personal allusion and we will proceed to the subject of feeding in typhoid fever. Probably the greatest danger to life in this fever, complications not expected, is from starvation. Dr. Samuel Fenwick of the London Hospital, by scraping off the gastric mucous membrane of those who had died of typhoid fever and other diseases, for comparison, found that the membrane loses nearly one-half its strength by atrophy of the viscus, and nearly twice as much as is the loss in other diseases. It is not only the intestines which suffer and refuse to do the office of digestion, but the stomach is so atrophied and its peptonic power so weakened that it is rendered almost as incapable of digestion as in the case of the newly born babe. Indeed in a few cases reported pepsin was entirely wating in the mucous membrane of those who had died of this fever. Bearing these facts in mind, therefore, we not only see the need of a most

nutritious diet, but a most easily digested one as well. It should be exclusively fluid and of all these chemical, analysis and clinical experience point to milk as the one *par excellence.* Milk contains every element necessary to nutrition. The only trouble with it is to get it to digest and thus again with the patient. There is so little gastric secretion in the enfeebled stomach that it is all required in the first process of digestion, i.e., the coagulation of the casein and none is left to complete its conversion into peptones. Predigested preparations are used with varying degrees of success, but none of these are equal to cow's milk diluted to meet the degree of gastric enfeeblement, usually one-half being the most reliable and to be proferred. I always dilute milk one-half with lime water, as it is very agreeable and antiseptic, thus stimulating secretion and aiding digeftion. Pepsin, in 10 gr. doses every three hours, should be given throughout the whole course of the fever, and occasionally diluted hydrochloric acid should be added. This will give as nearly as possible complete and easy gastric digestion, and the smallest amount of debris will be left to pass into the diseased intestines. Antiseptics in the treatment of typhoid fever are unquestionably of the very greatest importance. They have stood the strongest of all tests, the test of time. Long before the theory of antiseptics was known we find the profession regularly prescribing and obtaining their best results in the administration of antiseptics, such as calomel, turpentine and quinine. The principal virtue in these remedies lies in their antiseptic power. A calomel cathartic I always give at the onset of an attack and feel safe to repeat it, and often so, until evidence of ulceration of peyer's patches occurs. Its action is not only of local benefit in clearing and retarding fermentation in the bowels, but by stimulating the emunctory secretions generally it is a great eliminator of toxic material which is accumulating in the system. Turpentine should always be given when the mouth is dry, the tongue parched and the bowels tympanitic. Ten drops, in emulsion or capsules, every three hours, should be given until this condition is relieved, and then discontinued until suggested again by the same condition.

Bismuth is a non-irritant antiseptic of the utmost utility in this connection, and should be given continuously from beginning to end in similar doses and in connection with the pepsin. Forty grains subcarbonate bismuth and forty grains saccharated pepsin, divided into four equal doses and given in twenty-four hours will usually prevent or relieve diarrhœa in typhoid fever. Then, too, bismuth being the reverse of an irritant it guards against any irritation which might possibly arise in connection with the administration of another remedy for which I have the highest regard. I refer to iodine. The use of the compound solution of iodine in typhoid fever is known in Germany as the "specific treatment." I give the tincture of iodine in five drop doses, diluted with water or in capsules, every three hours until all signs of intestinal changes pass, and midway in the interval elapsing between the

doses of bismuth. Chlorine is perhaps more frequently used and is highly spoken of by those who have tried it. I usually put one drachm chlorate potash to one pint of water and let patient use it to drink when the tongue is dry and sordes collecting on teeth and lips.

I want to emphasize my confidence in iodine and assure you that administered in the way I have prescribed, along with bismuth, the taste is not returned, no irritation of the stomach is produced and in fact nothing observed to contra-indicate its use. But a moist tongue, a diminished tympanites, a controlled diarrhœa, a reduced temperature, a quieted nervous system,—these, all or in part, are the beneficial results we may expect.

Opium is indespensable to control the active maniacal delirium that is occasionally met with in some patients. It should also be administered to quiet the severe peristaltic action of the bowels in some cases, and thus check the resultant diarrhœa, and render less the liability to perforation.

Every fever has its own temperature, its own dangerous temperature. If the temperature in typhoid fever is not above 102° F., a. m. and 103° F., p. m. it is very doubtful if we possess any means of reducing it without doing more harm than good to the patient. But when it reaches a point considerably above this comparatively safe limit the patient begins to fail rapidly and ere long will succumb to its prostrating influence, if not relieved. Muscular atrophy and and the blocking secretion by continued high fever are the principal causes of death in protracted cases. A temperature of 104° F. brought down to 103° F. for twenty-four hours is a saving of much strength to the patient. One degree lower for twenty-four hours is 24° of fever, and this is very much. The parenchymatous changes in the heart, the muscular atrophy and the nervous postration all contraindicate depression of every kind. Quinine should *at no time* in the course of the fever be given in full antipyretic doses. It will reduce temperature certainly, but at the expense of the heart power and in bringing the fever down it brings the patient down also. It is a muscular paralyzer. The same is true of the coal tar family, including antipyrine, antifebrin, phenacetin etc., with a generally conceded discrepancy, however, in favor of phenacetin. This last should only be used, if at all, during the first and second weeks of the fever. The cold bath judiciously and systematically employed is the safest antipyretic in typhoid fever. The official German Military statistics showing a reduction of mortality in the treatment of typhoid fever from 26.3 per cent. to 3.3 per cent. by adopting the Brand treatment is perhaps the greatest encomium that could be paid this system of fever reduction. Usually from two to four baths per day are needed to control the fever and hold it within safe limits, until its high range is broken. The thermometer is the safe guide, and indicates whether the bath should be frequent or seldom. The temperature of the water should be no lower than 70° F. or 80° F. when the patient is placed in it, and then should be reduced gradually to 60° F. or 65° F. and

there maintained until the rectal temperature registers 103° F , if it has fallen rapidly, or 301°F., if it has fallen slowly. The patient should then be removed from bath and wrapped in blankets. Now he usually becomes rational, drops to sleep and falls into a gentle prespiration. Circulation and respiration becomes natural. In children and very feeble patients the wet pack is preferable to the cold bath. The patient should first be wrapped in a sheet wrung out of tepid water, and over this is placed one wrung out of cold water. The latter can be removed and reapplied, without disturbing the former; until the temperature is reduced.

A few remarks in regards to stimulation and I have done. Too much reliance should not be placed on alcoholic stimulation in typhoid fever. It should be borne in mind, from the outset, that it is *only* a stimulant and its administration withheld until postively indicated. Prof. Loomis says: "When there is reasonable doubt as to the propriety of giving or withholding stimulants, it is safer to withhold them, at least until the signs which indicate their use becomes more marked." A logical statement an characteristic of this wise author!

In one case there may be no demand for stimulants from first to last; whereas, in another they may be imperatively demanded and in large quantity. In one case we may need to stimulate only at night, in another during the entire twenty-four hours. Every case requires careful observation and individual study, as perhaps, no two are ever exactly alike. Usually stimulants are not required before the third week. From two to six a. m. vitality is at its lowest ebb and at this time, in observance of this physiological law, we may expect stimulants required. It is better to administer large doses, that we may obtain its physiological effect, rather than smaller doses after repeated and with no perceptible results. The effect of the first few doses should be carefully watched and studied by the physician before prescribing a continuation of its use, and if he finds that the heart beat becomes more regular (with a clear first sound), the patient quiet, the mind clear we know that the stimulant is doing good.

THE RATIONAL TREATMENT OF PUERPERAL ECLAMPSIA.

By T. S. McMullan, Hertford, N. C.

The greatest problems perplexing the minds of medical scientists to-day are the etiologies of diseases. In olden times, before the advent of Galen upon the medical field, when the Empiric School, led by Philinus and Serapion and later by Apollonius and Glaucias and Zenxis, pointed out the paths of treatment for maladies, the people, medical and lay, were content to leave alone all theories and to accept experience, and that alone, as the only basis upon which to build a remedial structure. But the day is now, and it has been dawning since Hippocrates uttered his famous aphorism, "Experience is fallacious and judgment difficult," when it is necessary to have a clear conception of the causes of diseases; and the rational physician is one who seeks to find out the occult reason of abnormal conditions and to treat them upon the principles involved in their causation. The old philosophers, too, more subtle than their empiric contemporaries, were soon to learn that medicine was a reasonable art; for Plato, in his Georgias, is heard to say, "And I said of medicine that this is an art which considers the constitution of the patient, and has principles of action and reasons in each case." There are some relics of empiricism in the world yet, but one by one the reasons for the actions of all drugs are being made known, and to-day the term is synonymous with quackery.

The science of medicine has to do with solving the problems of etiology, pathology and symptomatology; but the advances in the science would be of little benefit to mankind if the physician had not found their application in the art; for the treatment and cure of disease is the great endeavor of us all, and to secure the most effective weapons we must, as nearly as we can, have an acquaintance with the enemy..

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*Read before the North Carolina Medical Society, May 15, 1895.

The discussion of the rational treatment of any ailment presupposes a knowledge of its cause or causes. My object is to bring to your attention the treatment for this direful disease, which, to my mind, more nearly than any other, is antagonistic to the operation of the cause. It is not necessary to consume your time in bringing to your mind old and obsolete theories; it is only needful to call your attention to the generally accredited opinion to-day as to its etiology, in as brief a manner as possible, so that you may see that, viewing it as is set forth in this paper, the treatment prescribed is not without its reasonableness.

In 1842 Dr. Lever, of England, made known some observations he had made upon a series of twelve cases, in which he claimed a causal relation between albuminuria and the convulsions of child-bed; since that time this has been accepted as true by almost the entire medical world; one of the earliest and most vigorous opponents being Seyfert, of Prague, seconded by his school, who, because albumen was not always found in the urine of women having eclamptic seizures, and further, because some cases of marked albuminuria were found, which went to delivery with no symptoms of uræmia, denied the doctrine enunciated by Lever, Garrod and Rees, and refused to believe in the similarity between puerperal and uræmic convulsions, as demonstrated by Braun. But that renal insufficiency, causing a retention of excrementitious matters in the blood, which, by their action upon the vaso-motor centres, by producing arterial spasm, cause an anæmia of the brain, and which anæmia, by increasing the excitability, acts as a stimulant to the convulsive centre in the medulla oblongata, is the cause of puerperal eclampsia, I take it in the light of modern investigation, none of you will deny. For a long time it has been known that in eclampsia the brain is anæmic. How this state is brought about was for a considerable period a vexed question: The old Traube-Rosensteine doctrine, that it was caused by increased arterial pressure, consequent upon the hydræmic state of the blood, has given place to the more modern, more reasonable and more generally accepted views of Dr. McDonald, published in 1878, that the anæmia is caused by, and is due to a spasm of the arterioles, caused by the direct irritation of the vaso-motor centres by the toxines of the excrementitious matters, be they urea or carbonate of ammonia, or whatsoever. Dr. McDonald further held that the great excitability and stimulation of the convulsive centres, the direct cause of the outbreak, were brought about by the anæmic condition of the brain; for it has been shown in the physiological laboratory, by Rausmul and others, that convulsive seizures will be brought on by an artificially produced anæmia of the cerebro-spinal system. Upon this hypothesis, therefore, I shall discuss the treatment. It would not be proper, however, for me to fail to state that occasionally there is seen, at the bedside of laboring women, convulsions of a mild type, which have in them an element of hysteria and which are brought

about by reflex stimulation of the convulsive centre, through some irritation at the periphery; "nor would it be reasonable to exclude from the causes of convulsions in the puerperal state causes which might produce convulsions in the non-puerperal state." (Tyson.)

Now, whether this insufficiency of kidney action be due to mechanical obstruction, caused by pressure of the child upon the uterus or upon the renal veins, or whether it be due to some altered state of the blood, or whether to some organic change in the nephritic structure itself, I shall not argue. It only interests us here to know that uræmia does give rise to eclampsia.

With the symptoms and prognosis I shall have nothing to do—the scope of this paper is only to present a treatment in consonace with the propositions laid down as to the causative factors in this altered condition of the human system. Before referring to the remedial measures to be used during the attack, I shall notice in a very cursory manner the care with which every woman should be watched who shows during her pregnancy any evidences of beginning renal inactivity. This part of the subject is, I know, more or less foreign to my aim, my primary object being only to deal with the treatment of the seizures; but it cannot be amiss for all of us to have our minds frequently turned toward the great weight of responsibility thrust upon us, when we assume the care of a pregnant woman, and if, by early and systematic examinations of the urine, whereby we may detect the first evidences of approaching evil, and if, by notice taken of the general appearance of our patient, carefully noting all symptoms, subjective and objective, we can, by the proper use of depletives and sedatives, conduct our frail barque, with its precious freight, into a haven of safety, we can consider that we have attained the highest aim in medicine—the prevention of disease. Nothing in medicine should more command the best talent and endeavor of us all than to try to shield the frailer portion of the human family from this direful calamity. To prevent eclampsia if oftentimes more easy than to cure it, and it has been most aptly said—

> "A little fire is quickly trodden out,
> Which, being suffered, rivers cannot quench."

In noticing the rational treatment of puerperal convulsions, I shall consider first the advisability of bringing about artificial deliveries. To my mind, before the period of viability of the child, there are two courses open to us—after that period one. If, in a given case of convulsive seizures before the seventh month, under judicious treatment the fits were controlled, and by the employment of such remedies as are usual in this condition, and with the proper regulation of the diet, the albuminuria became less, the œdema disappeared and all the symptoms improved, and, with the arterial tension lower and renal secretion more profuse, I should hesitate to bring

about a premature birth; for it must be remembered that we have no right, human or divine, to sacrifice the life of an unborn child, unless the condition of the mother imperatively demands it; but if, after the use of sedatives, diuretics, diaphoretics, carthartics, depressants and depletives the œdema become greater, the kidney action less and the cerebral symptoms were all more grave, the pregnancy should be terminated at once. I have not once a doubt but that the removal of the fœtus would be, in every case, more favorable to the woman; but, as before remarked, it is the consideration for the life of the child, and that alone, that should deter us; for, notwithstanding the high mortality rate of infants in these complex labors, some are born alive. After the period at which, ordinarily, a child will live, the time limit of expectant treatment has passed. The *sine qua non*, then, is immediate and rapid delivery. This is my practice, and I want no better warrant for my action than the dictum of modern medical teaching, the first principle of which, in the treatment of any malady, is "the removal of the cause." The foregoing lays down what my views are in regard to this phase of the subject, and what I submit is the opinion of the best obstetric teaching.

The mention of any drug has been omitted heretofore, because I shall prefer taking them up in what this writer believes to be the true order of their importance; for, so far as the actions of drugs are concerned, the *modus operandi* of each is the same in all of the different states mentioned above.

The rational treatment of any disease is that treatment which is based upon a correct interpretation of the pathological conditions met with and which more nearly than any other opposes itself to the abnormal impressions brought about by that condition. So that, in formulating a remarkable treatment of the trouble under consideration, I shall beg of you to subdue for a short while your impatince while I reiterate what, in the light of modern medical teaching, the abnormal conditions found in eclampsia are. We have a deficiency of the functional activity of the kidneys, which causes to be retained in the circulation certain effete products that, in a normally acting body, are cast off. As the result of the direct stimulation of the vaso-motor centres, by the toxins of this excrementitious matter, there is brought about a spasm of the arterioles, causing high arterial and nervous tension and producing, in addition, an anæmic condition of the brain; this anæmia, by greatly increasing the excitability of the convulsive centre, together with the high arterial pressure, is the direct cause of what is known, clinically, as puerperal eclampsia, or, perhaps more scientifically speaking, uræmic convulsions.

Assuming, then, as a fixed fact, the reasons assigned above to be the true causes of this disease, what drug have we that more nearly than any other obtunds the impressions, direct and indirect, made upon their nerve centres by the circulating poisons? The one more nearly than any other answer-

ing this description is, I think, morphia, morphia sulphate, administered subcutaneously. Remember that we have to combat the action of the anæmic poison on the vaso-motor centres, stimulating them and causing high arterial tension and consequently anæmia of the convulsive centre, both of which are factors in the production of the seizures. All of us know the characteristic physiological actions of this drug; how it causes congestion of the cerebral structure; how it blinds the sensibility of the sensory cells; its action on the heart and skin. What is the effect, then, of morphia in these cases? We have excited nerve centres—morphia allays excitability; we have causing this irritability anæmia of the brain structure—morphia relieves this state; we have causing this anæmia a spasm of the vaso-motor system, high arterial tension and rapid nervous heart-beat—morphia relaxes the spasm, lowers the arterial pressure and soothes the heart-action. To me, did it only possess diuretic properties (which some, notably the late Professor Loomis, claimed for it) it would seem almost an ideal remedy. And to the reasons given above for its employment should be added its ease of administration and its facility of being rapidly absorbed; I have often thought, in view of the excellent clinical results which I have seen follow its use, that the sulphate of morphia, in addition to its many other valuable properties as a remedy, *par excellence* in this disease, added that of being a direct chemical antidote to the excrementitious products in the circulating blood.

Gentlemen, I am aware that I am advocating a new remedy, but I am warm in its praise because, not only from a theoretical standpoint does it show itself to be the most direct antagonizer of uræmic outbursts which we have, but because in my short experience in the practice of medicine I have seen results follow the use of morphia which refused the sweet solicitation of other remedies. With reference to the dose of this drug to be employed, the only rule is the one formulated in each individual case—only by the most acute observation of the effect of each dose upon the patient can the medical attendant satisfy himself as to the proper amounts to be given. I believe in large doses—not that the beginning be made of large amounts, but at first tentatively, with a keen perception of its power, we increase, if needful, each succeeding dose until warning be given that its further exhibition is useless and dangerous. While prudence would dictate that not more than one-quarter of a grain should be given at the commencement of the fits, I do not think that it would be hazardous to administer *one* grain at one hypodermatic injection, if the recurrence of the convulsions and the general condition of the patient demanded its continued use; for in these cases there is a tolerance for opiates which renders small doses more inert and large doses less effective than in most any other disease; and it must appear that in the irritation of the nerve centres by the uræmic poison there is an analogy to that terrible stimulation of the cerebral cells produced by severe pain; so that, just as in cases where we meet with great agony there is a peculiar tolerance

for morphia, just so in uræmic convulsions we find the same marked insusceptibility to its use.

Venesection.—Until thirty or forty years ago, for a physician to visit a case of eclamptic seizures and not use the lancet, would be looked upon as a gross violation of the rules governing medical practice at that day. Later, by about twenty or twenty-five years, it would have been regarded as almost criminal to bleed. The rebound was too great, and no doubt but that as many lives have been sacrificed by its non-employment as were ever victims of the too vigorous use of the knife. Fifteen years since Dr. Barker plead for its restoration—not advocating its employment in all cases; but when he found a patient with *very* high arterial pressure and of very full habit, he concluded that venesection not only did good by lowering blood-pressure, by relieving, in some degree, the load upon the kidneys and by removing, to some extent, the irritation of the nervous centres, but that its quickness of execution made it almost invaluable in such cases as a preliminary treatment. It renders the absorption of drugs more rapid and makes the sufferer more susceptible to the influence of other remedies. I do not think venesection useful, or even rational, in all cases. Only those women who are plethoric and who exhibit unusual arterial tension should be, in my opinion, subjected to this spoliative measure. Incidentally I would like to remark that, during pregnancy at any time when such symptoms are evidenced as would lead one to suspect some functional derangement of the kidneys, in such cases as those noted above as calling for venesection, my habit has been to use the lancet. The amount of blood taken is to be governed by the number and force of the cardiac pulsations.

Veratrum Viride.—As an arterial depressant veratrum viride has been highly extolled as a rational remedy in these cases. While my individual experience with this drug has been small, yet the few times I have employed it have set at rest any doubts I may have had as to its efficacy and have led me to believe that the claims made for it rest upon a substantial basis. It reduces the number and force of the heart-beats and necessarily lowers the arterial pressure—one of the chief ends to be attained. In all cases in which the powers of life are so sapped as to make the employment of the lancet doubtful, in the treatment of all enfeebled and high-tensioned women, upon whom the perils of maternity must come and upon whom there is danger in resorting to too vigorous depletion, the employment of this drug finds its true field, and the results will show that the reasons for its employment are based upon true conceptions of the causes. Veratrum should be given in large doses, beginning with not less than fifteen or twenty minims and repeated every half hour until the heart-beats number not less than fifty or sixty per minute.

Chloral, etc.—I shall only mention the use of chloroform, chloral hydrate, bromide and the many other sedatives and antispasmodics advocated and in

use. Their generic names will give you the reasons for their employment. Chloral and potassium bromide, by the rectum, are no doubt of value, but their difficulty of administration and slowness of action make them more subsidiary to other measures than to be classed among our most potent weapons. For chloroform I have no use in puerperal eclampsia. The only time it has been used in my practice has left upon my memory a painful recollection, and I am free to confess that the contemplation of the use of this drug is not productive of the most fascinating reflections.

Mr. President, the employment of morphia and venesection in the class of cases noted above as calling for the lancet, and morphia and veratrum viride in those indicated as calling for less vigorous depression, together with the use of the subsidiary sedatives, chloral, bromide, valerian, etc., make up what I conceive to be the sedative treatment of uræmic fits. Add to these things carthartics for their depleting effects, and further because we desire the vicarious action of the bowels, diaphoretics, so that the skin may eliminate, as far as possible, the retained poisons; diuretics to assist the kidneys in their labor to rid the system, and we have made up what, to my mind, appears to be the *rational* treatment of puerperal eclampsia. It is not my purpose to prescribe an especial cathartic, or diuretic, or diaphoretic. I will only mention that my preference is for the salines during pregnancy if an attack is threatened, and for calomel, in minute doses, in the beginning of an attack—this last for the reason that, as you know, it combines valuable diuretic properties with its action as a cathartic, and its ease of administration is a further consideration for its use. Of diaphoretics, pilocarpine presents itself as the most convenient and efficacious, and, in conjunction with the hypodermatic use of this agent, the hot pack is of great service in producing an effective action of the skin, and with reference to diuretics, my habit has been to give the acetate of potassium conjointly with such others as each peculiar case demanded. I am not, however, insistant upon the above-mentioned drugs, since all of us have our own preferences with reference to what drugs are best—the only rule is to meet the indications by what you consider the most effective therapeusis. While the first indication is to establish the functional activity of the emunctories in these cases (for the loss of this is the fountain and origin of all the evil), we all know that our first endeavors, upon being called to such a case, are directed toward stopping and preventing the outbreaks. The sedative part of the treatment is what was in my mind when this subject was first contemplated and upon which I have, for the most part, dwelt.

The rationale of the other part, or what might be called the constitutional treatment, is so plain that it needs no elaboration; hence it has merely been mentioned; not but that its importance is as great, but because its conception is easier.

In concluding this paper I shall apologize for the many prolixities and

repetitions in it. As an excuse, my only plea is my great desire to make each proposition relating to treatment find its base upon the propositions laid down as to etiology. I have offered no statistics; I have brought forward no clinical proof that my statements with reference to treatment are true; but if you admit the causes, you will be forced to admit the reasonableness of the remedies presented. With the increase in zeal to lessen the sum of human misery, with the advances in instruments of observation and precision, and as freer intercourse is had between scientists of different nations, it may be that in the light of further investigation some other causes than the ones now assigned may be given and accepted as the producers of puerperal eclampsia, and our treatments may become as obsolete as the ideas of old empirics are to us. But in the light which we have we must be guided by the views of those eminently qualified to teach us concerning these things, and, blieving them, we must so use our judgment as to erect upon these well-grounded theories treatments which have in them soundness of reason.

DISCUSSION.

Dr. McDowell stated briefly a case he had some years ago. It was a case of insufficiency of kidney action in pregnancy. It did not result in eclampsia, from the fact that voluntary abortion came on. One of the interesting features was the early period in pregnancy in which the symptoms made their appearance. In this case the symptoms were prominent as early as the third month. The flow of urine was absolutely nil. The patient herself did not know of the dangerous condition she was in. His attention was called to it casually. He went to see her and found her suffering from almost absolute amanrosis. She could tell when a large body passed between her and the light, but was not able to see her mother or husband and recognize them, and was yet able to attend to her duties. The symptoms became more and more pronounced and she continued in that condition for several weeks. Occasionally she had an exacerbation of symptoms, which were frequently relieved by a hot bath. She continued that way until she voluntarily aborted about the close of the fourth month. Since that time she has a well-developed case of Bright's disease. He asked if any other members had noticed permanent Bright's disease in pregnancy ? The urine being examined closely, was found to contain nearly 40 p. c. albumen. Now, at intervals of a week or ten days, the urine gives 12 p. c. of albumen. She is now up and attending to her duties. He thought amaurosis a symptom of real insufficiency in pregnancy, and that Bright's disease is a result of that condition, but his experience was limited.

Dr. Faison had listened to the paper with a great deal of pleasure, as he had had some experience in that line. About ten years ago he was called to see a woman in a trance: It was at Mt. Olive. She was a large colored woman, and had during the day twenty-three convulsions. A few days be-

fore he had read in a *Medical Record* an article of a gentleman in Pennsylvania advocating large doses of morphine. When he found this woman it seemed there was no hope; labor had progressed very slowly. With a great deal of fear he gave the woman two grains of sulphate of morphine, at one dose, hypodermically. He felt that if there was any hope in the world he would get it out of that article. The woman had no more convulsions, and as soon as she went under the influence of the morphine he dilated the cervix, turned the child and delivered it. The next morning, on going back, the woman could not be aroused by anything he could do, but her heart was beating, and he did not give her up. In the afternoon, when he went back, her husband and children met him smiling and laughing. She was conscious and bright and went on to a rapid recovery without fever and without trouble. That was the largest dose of morphine he had ever given, and he did not think he would have the courage to give it again, still he was glad that he gave it that time.

About two weeks ago he was called to see a woman suffering from anæmia. He got a little of the urine and took it home and the greater portion of it solidified immediately. He went to work to get her kidneys to act. She never passed four ounces of urine in twenty-four hours during the whole two weeks, with the most heroic treatment. The brain was very anæmic. He tried a solution of nitro-glycerine, thinking to dilate the vessels and increase the flow of blood in the brain. The pain in her head was very intense. On the next day, at 9 o'clock a. m., she went completely blind, which condition lasted six hours during the day, and in the afternoon she began to see. That state of affairs existed for two weeks. During the week there was no increase in the action of the kidneys and no diminution of the albumen. On Thursday night he was called to her, she being in labor. She was having rather intense pain, the cervix was dilated and he ruptured the sac in order to hasten the labor. He had never seen so much water in a sac in his life before. The child weighed about three and a half pounds. She delivered very rapidly and has had no bad symptoms. Her blindness came on the next morning at 9 o'clock. She was blind every day and he had left her blind. Her kidneys had begun to act and the urine had gotten to the amount of a quart a day. Her neck was so enlarged that it was filled up from the ear to the shoulder. Her appetite came on. Two years ago she was confined and went through this labor and trouble alone. She was blind then and was blind three months after the confinement.

Dr. Noble reported the following case: He was called one morning to see such a case as Dr. Faison had described. He saw a strong, healthy woman sitting in the corner and she said: "I am as well as I ever was in my life." He was about ten feet from her and she could not see him. He took some of her urine home. In about half an hour she began having convulsions and he was sent for about sunset. He went into the room and gave her a

dose of morphine, how much he could not tell. He poured it from his bottle into a spoon, with a little water, and gave her the spoonfull. It was probably about a grain and a half. The next morning she was up and sitting in the corner when he called, but could not see anything. He put her on the treatment of acetate of potash for thirty days. He reached the house just in time for the child to be born. She had had, probably, two children before, and each time had had convulsions and the child died. She had had two since and they all came to the full term, and she had had no convulsions since.

Dr. Tayloe considered Dr. McMullan's paper as entirely covering the ground in every respect, and he knew of no remedy that could be used with better effect.

CHOLERA INFANTUM OR CHOLERAFORM DIARRHŒA.

By W. E. Fitch, M.D., Durham, N. C.

This is the most severe form of infantile diarrhœa, and the most fatal disease of infancy and childhood, still to a certain extent it is a preventable disease, yet some of the most efficient factors in its production, are practically beyond our control. In large cities the disease will claim many patients in spite of our most energetic and persistent efforts. The conditions of life in large cities strongly favor its development. It is a surprising fact that any of the little ones residing in the slums of our cities, escape the dreaded disease. One accustomed to the pure fresh air of the country would scarcely believe how stifling and poisonous the atmosphere becomes in a densely populated city during the hot summer days, and close summer nights, foul odors emanating from every gutter and inlet from water closets, and street excavations made during the months of July and August. The impurities in the air arising from these foul gases, produce purgative compounds as pointed out by Dr. J. Lewis Smith, in New York Medical Journal of 1890.

While such a condition of affairs will always be present in towns of sufficient size to have areas solely inhabited by the ignorant poor, yet there can even in their districts be something done towards moderating the chances of infants contracting the disease. If boards of health and street cleaning committees cannot succeed in enforcing sanitary laws, the individual householder can be taught the well known lesson by which the streets of Jerusalem were kept clean. Great care should be exercised in the feeding of young infants as a means of preventing the dreaded disease. The inability to obtain pure fresh milk daily, may be to a certain extent, compensated by the thorough sterlization of the supply as soon as it reaches the house. This alone is not sufficient, as the milk must be kept sterile until used. When ice can be obtained and clean receptacles used this is a matter easily accomplished but with a large proportion of our city population is an unattainable luxury, and when the lesson of cleanliness have not been learned, in such families preventive measures can hardly be adopted. I have been told by anxious mothers that they had put the milk in the cellar to keep cool and on going into the cellar found it reeking with the odor of sewer gas and mould while the living room of the house seemed sweet and clean by comparison. With such people as these to nurse and care for patients with Cholera Infantum our directions will not amount to much.

The best thing that can be done is to have each bottleful of milk sterilized in boiling water before using, this being a source of much trouble to the already overworked mother, it will either be neglected or improperly done.

Many a case of cholera infantum owes its existence to the death carrying long rubber tubes, sold in the drug stores as a substitute for the old fashioned glove finger nipples. When one sees babies tugging at the nipples of foul nursing bottles with six or eight inches of fouler tubing, the frequency of cholera infantum can not be wondered at. No matter how much care may be taken in cleansing these long rubber tubes it is impossible to render them perfectly clean. The more old fashioned glove finger nipple can be turned inside out, and properly cleaned. It is not only softer but cheaper and the great advantage that it possesses from the careful point of of view, is that the child cannot keep on sucking indefinitely, without the help of the nurse, whereas the frequent practice of allowing the child to lie with the long rubber tube constantly in its mouth "to keep it from crying," cannot be too strongly condemned. Many an attack of colic that may be merely the forerunner of cholera infantum may be cut short by the timely administration of some carminative, such as a few drops of aromatic spirits of ammonia in a teaspoonful of hot water, instead of pokeing the foul long rubber tube into its mouth, thereby "adding fuel to the flame." While, notwithstanding, improper drainage, foul surrounding and waste from kitchens thrown into the sun to putrefy, cleanliness in procuring and rendering sterile the food supply, and manner of feeding, may prevent an attack, the less prevenatable cause, high atmospheric temperature, cannot be avoided save by a change of habitation. On this account, children when it is possible should be either wholely removed from the city during the hot spell, or if this is not practicable, they should be given a ride in the evening after sundown into the country. Teething children are especially apt to be attacked, owing to the accompanying irriatability of the gastro-intestinal tract, and to the fact that a child's power of resistance is lessened during dentition more so than at any other time.

The important symptoms of cholera infantum, are three, referable to the gastro-intestinal tract, to the central nervous system, and the kidneys. Of the nervous system, the most important are depression, coma, convulsions, and fever. The diarrhœa itself is salutary; the number of stools is unimportant, though when they are very numerous, the accompanying depression is in part only, due to serous drain. The disease is characterized by frequent stools, vomiting, great elevation of temperature and rapid and great emaciation with loss of strength. It more frequently occurs under the age of two years. It sometimes begins abruptly, the previous health having been good. Again in other cases it is preceded by the ordinary "summer complaint." The stools are thinner than natural and somewhat more frequent, but not such as to excite great alarm; when suddenly they become more frequent and watery, the parents are surprised, excited and frightened, by the rapid sinking of their darling baby. The first evacuations unless there has been a previous diarrhœa, may contain fecal matter, but more often they

are thin, so thin as to soak into the diaper leaving only a faint green stain with perhaps a few lumps of mucin precipitated from the mucus by fatty acids. The odor is peculiarly offensive, not fæcal or musty, but putrid, commencing simultaneously with the watery evacuations or soon after. Another symptom is irritability of the stomach, which increases greatly the prostration and danger. Whatever drinks are allowed the little one are immediately rejected, or at least after a few moments or retching may occur without vomiting. There is complete anorexia, but thirst is intense; cold water is drank with avidity and when the infant nurses it eagerly seizes the nipple in order to relieve its thirst. The tongue is moist at first or slightly covered with a slight fur. The pulse is accelerated, respiration slightly increased, the surface of extremities cool, but the internal temperature is always high in ordinary cases of cholera infantum, so that when registered in anus it reaches 105° or over. Although the infant may be restless at first, it does not appear to have any abdominal pain or tenderness. The restlessness is apparently due to the accompanying thirst, or failure of the vital powers. The urine throughout is scanty. The evacuations and loss of strength are more rapid than in any other disease, except Asiatic cholera. In a few hours, so rapid is the emaciation and the changed melancholy condition of the child, parents often fail to recognize any resemblance that formerly existed of their darling baby. The eyes are sunken; the eye lids and lips are permanently open from the feeble contractile power of the obicular muscles. The rapid emaciation and great loss of fluids from the tissues cause bony prominences to be seen, the skin in places lies in folds, the face has wrinkles of the aged. When the disease is approaching a fatal termination, which often occurs in three or four days, the little sufferer remains quiet not disturbed even by the flies that crawl over its face and into the half open eye lids, and here you will see a thin filmy secretion almost covering the eye balls, giving it a glistening codaveric appearance, pupils being contracted. The urine very scanty or entirely suppressed, as the vital powers fail the patient rapidly grows weaker. The surface now has a cold clammy feeling, pupils fail to respond to light, coma deepens, the little one grows cooler, its little heart fails, and it goes up to the place prepared for babies and the saints. In favorable cases of cholera infantum the diarrhœa is checked before the grave symptoms come on. And in cases which terminate fatally, often there is not such a speedy termination as above described. Choleraform diarrhœa abates and the case becomes one of ordinary "Summer complaint."

Treatment.

In teething children with great gastro-intestinal irritability, early lancing of the gums is imperative during the hot months. When an attack has already begun prompt action is necessary. If it be possible remove the child

to the country or sea-shore. This removal may be the means of saving the little one's life without the use of much medication. When it is not possible to remove the child, the largest, coolest and best ventilated room in the house should be selected for the sick chamber. The child should be lightly but snugly clothed with flannel next to the skin and allowed to lie on a bed or in a hammock instead of the nurses lap. It is very important also, that the infant receive its food in proper quantities and at proper intervals. The physician should be able to give positive directions not only in reference to the quality and quantity of the feedings but also their frequency. Anxious mothers sometimes allow the intant too much at a time, the surplus if not vomited undergoes fermentation, and by its presence causes an increase of the gastro-intestinal irritability. Every physician who has treated this disease is aware that the mode of feeding has much to do with its occurence, and a large number of these little ones who fall each summer victims of this disease would doubtless escape if the feedings were exactly proper. The main line of treatment that I usually outline, is as follows:

1. To provide the very best, possible food which will afford sufficient nourishment and be easily digested.

2. To aid the digestion of the little patient.

3. To employ such medicinal agents, as can safely be administered to check the watery discharges and cure the intestinal catarrh.

4. To allow plenty of fresh air which is especially needed if diarrhœa be during the hot snmmer months.

As I have already stated milk designed for the nursery should be subjected to the action of hot water just a little below the boiling point for an hour and each bottleful should be so sterilized before feeding. By the proper admixture of farinacious food with milk, the best possible food for bottle-fed babies is obtained. Mellin's baby food here used is a useful preparation. If wet nursed or bottle-fed the baby cries for its food at short intervals to relieve the intense thirst. No more nutriment should be allowed than is necessary for the maintenance of the child's strength. Thirst may be relieved by a little cold water to which has been added the white of an egg and a few drops of brandy, this not only relieves the thirst but quiets the nausea.

In the dietetic treatment of choleraform diarrhœa, in a bottle-fed baby, in which not only diarrhœa but indigestion and vomiting are prominent symptoms it is best to withhold cow's milk, and to allow only barley gruel. If on this diet should the infant show any signs of innutrition I add to the gruel the white of an egg and a few drops of good old apple brandy; one drop for each month of the childs age, and direct it to be fed every three hours. This will change the putrid smelling stools in a few hours.

Medicinal Treatment.

It is evident that opiates are less used than formely in the treatment of microbic diarrhœa of infancy. Opiates diminish the peristalsis and lock

up the secretions but they do not destroy the microbes or ptomaines. Their use I think should be wisely limited to the cases where there is great restlessness, tenderness and frequent watery evacuations. They may be useful to keep the child quiet until other remedies can have time to act. Tinct. of opïum camphorated is the opiate above all others I prefer. This agent is highly stimulaing for the camphor it contains; 15 drops may be given to an infant ten months old. If there is great irritability of the stomach and this connot be retained, I give sulphate morphia $\frac{1}{200}$ to $\frac{1}{300}$ grain doses combined with aromatic acid and repeated every two or three hours according to the effect produced, and age of patient. Internally I use stimulants freely, using brandy (old apple). The amount required will vary according to age of patient; 5 to 30 drops may be given every hour or two. For heart failure and threatened collapse, plunge the patient in a hot bath which performs a double function, stimulating the heart and favoring the elimination through the skin of the poison producing the depression, and internally give from $\frac{1}{2}$ to 2 grains ammonium carbonate, but this is apt to increase the vomiting; when it does use the following:

℞—Creosoti	. . .	♏ $\frac{1}{8}$.
Bismuthi sub nit	. .	gr. iii.
Mucilag acacia	. . . . .	♏ xx.
Aqua cinnamomi	. . . . .	qs ft. ℥ i.

M. Sig. Shake well and take at one dose.

This taken with lime water ice cold and a sinapism applied over the epigastrium will give you results that are pleasing. For the diarrhœa, my observation has led me to regard subnitrate of bismuth as the best antiseptic in microbic intestinal disorders. I have obtained very good results from the salicylate of bismuth. This has in a few instances in which I have been able to use it, had a most beneficial effect on both purging and vomiting. The subnitrate of bismuth is the preparation I like best. When taken into the stomach it undergoes a chemical change, becoming a sulphide causing dark stools. In may be combined with pepsin or chalk and given in larger doses; 10 grains to an infant of ten months old. Lavage of the bowels is highly extolled by some, but my experience with the modus-operandi has not been such as to extol its use; perhaps I have not used it sufficiently to determine its full value. Faulty digestion often produces acids, especially lactic and and butyric acids. These acids which are active irritants to the gastro-intestinal tract should be neutralized while we endeavor to prevent their formation by improving diet and aiding digestion. In some cases the inflammatory irritation of the mucus follicles causes exaggerated secretion of mucus which is alkaline in reaction and partly neutralizes the acids, but in all cases it is safest to give lime water or some of the chalk preparations added to the prescription given above, containing creosoti $\frac{1}{8}$ minims, given midway between nursings. I usually commence the treatment by giving 2 grain

hyd. chlo. mite, rubbed up with sugar of milk and made into four doses and give one every hour, the last dose to be followed with a dose of the old time remedy—castor oil, as a gentle purgative, and follow this with the prescription given below. It very important in the treatment of cholera infantum to aid the digestion while you administer an antiseptic. The following is the prescription above refered to:

℞—Acidi hydrochlorici (dil.) . . . . ♏xvi.
Pepsin Purum in lamellis . . . ʒ i.
Bismuthi sub nit . . . . . ʒ iiss.
Syrupi. simplex . . . . . ʒ ii.
Agua pip. . . . . f ʒ xiv.

M. Sig. A teaspoonful after each feeding or nursing to a child twelve months old; less according to age.

This prescription must be made fresh every day and kept on ice, as it is prone to fermentation during the hot months.

If my patient lives some distance from the drug store, or in the country, I generally give the following prescription:

℞—Pepsin. Puri in lamellis . . . . ʒ i.
Bismuthi salicylat . . . . . gr. xxxvi.

Ft. chart. No. xii. Sig. One after each feeding or nursing.

The use of opiates require caution and should be entirely suspended when coma or stupor is present. If the patient stands the strain removal to the country or sea-shore should be urged, as a relapse may readily occur. The return to normal diet should be gradual and slow. While the intestinal tract will require judicious medication to overcome the resulting inflammatory condition always left.

SOMETHING OF SURGERY UP TO DATE

By Chas. O'H. Laughinghouse, M.D., Greenville, N. C.

My youth and inexperience make me diffident in attempting to discharge the duty conferred upon me; for anything like a complete report of surgical advance, made by even a competent reporter, would take more time than we could give this, the greatest and most progressive branch of our art.

I will attempt to give you at least

SOMETHING OF SURGERY UP TO DATE.

however, asking in advance that you throw the mantle of charity over all shortcomings, and trusting that the other papers of my Section, which will follow this, will bolster up my deficient efforts and, after all, make the report on surgery and anatomy an interesting one.

I will first ask your attention, in as few words as possible, to brain surgery, hoping to give a sufficient number of facts to show what has been attained in this progressive field.

Until recently the skull was regarded as a region, surgically speaking, so dangerous, that *dantes malto*, "Abandon hope all ye that enter here" might have been considered as an appropriate warning to those who desired to attempt an invasion of its contents. The relation of the functions of various portions of the brain and of operative possibilities on this part of the body have exercised a marked influence upon recent surgical practice, so that we can now, with almost absolute certainty, map out various portions of the cortical substance from the exterior of the skull.

For example, the fissure of Rolando, around which cluster so many important centres, can be localized externally with surprising certainty by lines

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drawn from stated points. Once the position of the fissures is obtained and the brain exposed, the latter can be faradized and the motor cortical centres located. A great deal of study and experimentation has been carried on along this line of late, and many things by enthusiasts have been put down as proven.

The following facts, from all the information I can gain, seem to be the larger part of what has been undoubtedly proven:

1. That when regions of cortex of brain of lower animals are irritated by mild electrical currents, *motion* is produced in portions of the body over which the irritated region presides.

2. That portions of the cortex shown to be closely associated with *motion* are known as the Rolandic region, which is composed principally of the convolutions separated by the fissure of Rolando as well as parietal lobule. The above region is subdivided into special centres, found out and proven thus.

Irritation of the parietal lobule and upper junction of ascending frontal and parietal convolutions produce in lower animals advance of opposite hind leg and flexion of thighs and toes, as in walking.

When the middle portion of the ascending convolution is irritated, movements of hand and arm follow. The lower portion of the same convolutions are in like manner shown to preside over movements of mouth, tongue and nose.

Coming posteriorly near the angular gyrus, irritation results in movements of eyes and eyelids, while still further down on the superior tempero sphenoidal convolution there is pricking of opposite ear, turning of head and eyes to opposite side and dilation of pupils.

Other regions, though irritable, are not connected with coördinated movements, while a large portion of cerebral cortex is insensible to faradization. These experiments teach us two facts:

1. That "motor activity," though present to a great extent in the so-called "motor area," is not entirely confined to this area.

2. That while each hemisphere is closely associated with the opposite half of the body, to a subordinate degree it also presides over the same side.

What has been said is all I can find positively proven concerning cerebral localization. There are a great many other probably soon-to-be facts, but as yet they are *sub judice*. Some of these are, in a few words, as follows:

1. That the brain of monkeys and other lower animals in the same class resemble the brain of man to such a degree that what was true of one is equally true of the other.

2. That both in man and lower animals the brain is so differentiated that certain areas preside over allotted functions, and that they are capable of being subdivided—this being especially true of motion and true also, but to a lesser extent, of the special centres.

3. That the brain has been mapped out into centres of motion, sensation,

sight, hearing, speech, smell and taste, and that they have been located as follows:

Motion.—The ascending frontal and parietal convolutions, their superior and the paracental lobule is known as the "Motor or Rolandic Region," and has been subdivided into fingers, hand, mouth, etc., every muscle and group of muscles being represented by a definite area in the cerebral cortex.

These conclusions are results partly of comparison experiments with animals and partly of pathologic research, and may be thus summed up:

The superior parietal lobule, when stimulated, causes advance of hind leg.

The upper portion of the ascending parietal lobule holds the complex movements of leg, arm and trunk.

The ascending parietal lobule holds individual and combined movements of fingers and wrists and also prehensile movements.

The posterior extremity of superior frontal convolution possesses movements which extend forward the arm and hand.

The ascending frontal convolution is the region in which is held the power of supination and flexion of forearm.

In the lower one-third of the ascending frontal convolution and at its junction with the ascending frontal and ascending parietal is stored motion of mouth and tongue.

The superior and middle, frontal and superior marginal lobule and angular gyrus possess movements of mouth, eye deviations, change of pupil and turning of head.

First temporal convolution, when irritated, causes turning of head, dilatation of pupil and pricking of ear.

Visual Centre.—Different localizers have by no means agreed as to many minor points concerning this centre, but the occipital lobe seems to have such a majority of supporters as to be deemed the accepted centre.

Auditory Centre.—Experiments made on lower animals, according to Hamilton, are far from satisfactory, but the position most agreed upon, according to the knowledge of the subject, is the superior temporal convolution.

Speech Centre.—There is no fact in cerebral surgery more generally recognized than a speech centre, yet it is not included among the centres proven undoubtedly. While localizers recognize the close relationship between the destruction of Broca's region and aphasia; yet they deny that, in the strict sense of the term, it is a proven centre, still we know, without any doubt, that when Broca's region is involved in any destructive process there is often right-sided hemiplegia with aphasia.

Tactile Centre.—There is no question about the cerebrum more undetermined and seemingly undeterminable than is this. Farrier and his followers locate the centre in the hippolampal region, but the majority of localizing specialists, Flaising among the number, believe that the cortical centres, or

the field for motion and sensation, overlap each other, both occupying the Rolandic region.

From the above summary it is seen that in reality little is positively proven, yet the importance of these researches is undoubtedly great, for not only have they opened up a new field for experimentation and added greatly to our knowledge of cerebral surgical physiology, but they have aided us immeasurably in diagnosis and have been the basis for many brilliant operations successfully performed for localized growths, deposits and injuries of the brain.

Our medical journals are filled with operations justified by diagnoses which could not have been made but for what knowledge we have concerning cerebral localization. We have every right to expect a great deal more from it than we now possess. However, after referring to some few cerebral operative procedures, we will leave the brain to the wise handling of the next compiler of our surgical report.

Under the head of operations we will first look at craniectomy for microcephalus, which has been a subject of some interest for the past year, various journals having reported with both favorable and unfavorable results. A great deal of discussion has taken place on the future utility of this operation, and Dr. Karl Beck having studied the subject most thoroughly and presented it in the form of a very interesting and impartial article discussing both sides with equal justice, I deem it not amiss to quote his conclusions.

1. He believes craniectomy to be a justifiable operation and apt to be successful in cases of microcephaly, with idiocy.

2. That its success depends on the kind of microcephaly and the degree of idiocy.

3. That acquired and late forms of this disease give a better prognosis than congenital cases.

4. That the danger of the operation is not very great.

5. That the operation should be extensive, that is, the opening in the skull should be large enough to permit dilatation.

6. That the patient must be given a thorough pedagogic treatment afterward.

Trephining for brain affections is daily becoming more general. In fact, its field of usefulness is broadening so greatly that one cannot, in a report limited to twenty minutes, give any idea of its present position. I will confine my remarks under this heading to opening the skull for a very few diseases.

First, we will take encephalitis. For this disease trephining has met with some success, and so great a man as Victor Horsely strongly advises this treatment as a means of giving vent to inflammatory exudations, favoring it more strongly in chronic than in acute cases.

A case reported by Dr. Barker shows where an ounce of odorless pus was

evacuated from fissure of Sylvius with good results. It is as yet too early to form positive opinions as to this mode of treatment, for there is little experience to guide us; but, to say the least, it seems rational surgery, for inflammation of the brain, like other portions of the body, is followed by exudation and suppuration, and the presence of pus within a cavity with no possible means of outlet like the skull, will surely cause rapid tissue change, with pressure symptoms in addition. This being granted, does it not seem reasonable that we should afford a means of outlet by trephining, opening the dura and draining?

When exudation, serous or purulent, occurs in a periosteum, we open it up and give vent to the fluid. So in inflammation of the brain, with serous exudation, future experience may show that it is wise to drain the exudate before it becomes purulent and causes irreparable damage to brain tissue. If we do not do this we still have some hope of giving relief, provided purulent infiltration becomes sufficiently localized to force an abscess, as cerebral localization has become well enough perfected to give us material diagnostic aid, as far as position of abscess is concerned. We can open this and drain with some expectation of success. When inflammation reaches this stage, according to the latest authority, we are warranted in practicing extreme trephining because its dangers are nothing to compare with leaving the abscess unevacuated, which, when left in this condition, will surely prove fatal.

Great advance has been made recently in surgery of lateral ventricles. Until of late it was believed that any injury to this part of the body was essentially fatal, even though this fact was disproved by the occurrence of some cases which recovered where the lateral ventricles have been opened by fracture.

Professor Keen has shown very clearly the fallacy of such opinions by puncturing lateral ventricles through the brain substance with accuracy, introducing drainage-tube into ventricles, allowing it to remain several weeks without inflammation of either brain or its membranes. He has even irrigated lateral ventricles from side to side after bilateral trephining without material discomfort to patient.

These facts teach us that we should not in fracture involving the ventricles give a patient up to die, but treat the case with the same antiseptic precautions we would have given it were there no injury.

Trephining for insanity, based upon focal symptoms, has met with some success during the past year, and many cases of interest have been reported, but time is too limited to give more than mere mention to this.

Dr. Keen, of Philadelphia, in a very interesting article on recent advances in brain surgery, gives some valuable hints which I will mention, then I will not tax your patience longer with this subject, but will ask you to listen to what is going on in the gall-bladder.

In discussing infectious diseases of the brain arising from middle-ear

disease, Keen lays great stress on opening up the mastoid just over the mastoid antrum, which, if you remember, is a single cavity, about the size of a pea in the centre of the mastoid spaces. In perforating the antrum to evacuate pus, according to Treeves, the drill is entered one-fourth of an inch behind the orifice of the meatus and a little below the level of its upper wall, the instrument being thrust into the bone nearly parallel with the auditory canal with an inward, a little forward and upward motion. Keen prefers the antrum:

1. Because it has direct connection with the middle-ear, and therefore will be the first part invaded by the pus.

2. Because from the antrum you can more readily reach the mastoid cells, which are so often filled with pus. Having reached the seat of suppuration, he cleanses it, not by a simple washing only, but by wiping out the cavity thoroughly with soft antiseptic gauze. He prefers opening the skull for mastoid disease with the ordinary carpenter's sink instead of a trephine, condemning chisel and mallet, believing that the blows of the mallet produce a disturbance within the skull sufficient to diffuse the pus and cause damage to affected brain tissue. There is danger, also, of the chisel going too deeply and penetrating the lateral sinus.

Macewen recommends for opening mastoid spaces a rotating bar such as dentists use.

An interesting and useful anatomical point in regard to operations about the mastoid is the supra meatal triangle, called attention to by Dr. Macewen. The boundaries of this triangle are, the root of the zygomatic process above, the posterior border of the meatus in front, and a line joining the two behind. The value of this triangle is two-fold:

1. Just at the base of the triangle lies the antrum. If you perforate at the base you will reach it.

2. The sigmoid portion of the lateral sinus always lies back of it, and is therefore out of danger when a perforation is made at the base of the triangle.

Again, if you draw a line back of the triangle, parallel to its posterior border from the posterior inferior angle of the parietal bone to the apex of the mastoid process, this line will correspond to the axis of the sigmoid portion of the lateral sinus, or, as it is better called, the sigmoid sinus.

Leaving the brain, which I fear has taken up so much of your time as to render you impatient, we will turn our attention to some surgery which has a history not to exceed twenty years. I allude to surgery of the gall-bladder. Only a short time ago operations now successfully performed for diseased conditions in this region were unheard of and deemed impossible. But now, thanks to aseptic and antiseptic methods and that life-saving, time-saving, inegnious Murphy button, surgery of the gall tract has become an inviting and absorbingly interesting field. Though results are not perfect, still many

glorious achievments have been attained and countless lives saved. The journals are fertile now with cholecystostomies–otomies, ectomies, entrostemies, etc; and even in the short space of twelve months great advancement has been made especially in technique.

From what I can gather the operations done on the gall-bladder up to date are as follows:

1. Incision of gall-bladder without further operative procedure, performed when the bladder has become gangrenous or surrounded by adhesions so extensive as to make it impossible to suture it to abdominal walls or anastomose it with any portion of the intestinal tract; or, where drainage of bladder is compulsory and you wish to use it as a canal in dangerous obstructive jaundice. By this method you may drain by the introduction of the tube into the bladder and packing it around with aseptic gauze, thus protecting the peritoneal cavity. A better method of drainage, however, is that described in the *Medical Record*, January, 1894, by Dr. John B. Murphy. He has invented a "button tube" drainage which has the advantage of—

(a) Being more quickly and easily inserted deep down into the abdominal cavity.

(b) Preventing any contact of bladder contents with abdominal viscera until sufficient adhesions have been formed to render leakage impossible.

(c) It leaves a long opening in the bladder when withdrawn, through which calculi may be extracted.

2. Cholecystendycis, or incision of gall-bladder with immediate suture and reposition into abdominal cavity, is another operation with a mortality of about 35 p. c. Though rarely used now, still it is worthy of mention, if for nothing else than to condemn it.

3. Cholecystotomy, or suture of gall-bladder to abdominal wound with secondary incision, is an operation done at two sittings. After adhesions have formed, which take generally from ten to fifteen days, the bladder is opened and its contents allowed to escape.

4. Cholecystotomy at one sitting or suture, with immediate incision, is a method where the whole operation is completed at one time. The opening being made into the gall-bladder as soon as it has been stitched to abdominal wound without waiting for adhesions.

5. Puncture of the gall-bladder is mentioned simply to condemn it. Even a needle puncture remains patulous, so this operation is on its face a dangerous one. Even if it were devoid of danger, it can do but little good except as a diagnostic step.

6. Cholecystotomy, or incising the bladder, removing its contents and suturing it to abdominal wall with extra peritoneal sutures.

This is a method seemingly not much in favor now. It was intended to replace cholecystendysis—diminishing the danger of this operation by having the bladder sutured extra peritoneal, so in case the suture should leak or

break the bladder contents would not come in contact with the peritoneal organs.

7. Choledo lithotripsey, or crushing of gall-stones; stones, when impacted in duct, are sometimes crushed with the finger or a needle passed through the duct on to the stone, may break it in half, then, by careful manipulation, the stone can sometimes be pulled on through the duct into the intestine or back into the gall-bladder.

Cholecystectomy by means of Murphey's button is decidedly the most popular and most satisfactory operation for opening gall-bladder. Its advantages over all others is so patent that its use has become general, excluding, to a great extent, many other methods. It has the following points of excellence and superiority when compared with other operations:

1. Saving of time.
2. It is more easily performed.
3. It is devoid of the danger of leakage, as it gives firm, close and accurate approximation of gall-bladder to parietal peritoneum.
4. It leaves a large opening through which gall-stones can be removed.

Cholecystenterostomy, or connecting the gall-bladder with the intestine is a favorite operation, and when feasible, is preferred to the other methods, as it gives the system the necessary amount of bile. If pathological conditions require a cholecystotomy, the Murphey button method is preferable to most authorities. This button has doubtless come to stay, though it is a young invention, still it has saved many lives and much precious time.

Not only has it proved useful in gall-bladder surgery, but in intestinal anastomosis of various portions of digestive tract its field of utility has been great.

Speaking of intestinal anastomosis, Senn's plates deserve mention, as reports of cases successfully treated by them are constantly appearing in the journals. We will pass from this very imperfect report of the present state of gall-bladder surgery to what seems to be a most excellent operation for gastrostomy, known as Witzell's method.

Its advantage over other operations is the prevention of leakage through the gastric fistula. The principle of the operation is this:

After cutting through the tissues down to the stomach, the anterior wall of this organ is pulled out of the wound. Opened near the lesser curvature by an incision of one-fourth of an inch in length, a piece of rubber tubing two feet long is on hand, about one inch of which is slipped into the stomach through the wound, which it accurately plugs. This tube is now secured in position and a species of artificial œsophagus formed. This is done by raising a fold of stomach on each side of rubber tube with a series of interrupted Lembert sutures, on tightening which the tube is buried for about two inches of its length in the gastric folds. You can now put food into the stomach through the other end of the tube. Should the œsophagus again

regain its function, as in cicatricial structure, the tube can be withdrawn without any after leakage and the fistula rapidly heals.

This lifting up of tissue around the tube as described, forms a kind of valve something like the ileo cæcal, which makes an efficient valvular defence against the outflow of gastric contents. Autopsies made several months after operation prove this fact.

Dr. Laughinghouse supplemented his paper with a verbal report of an operation for stone in the bladder. A little boy, about 11 years old, had come into his office suffering from retention of urine. On trying to insert the catheter it was found that an obstruction prevented. The stone seemed to be about the size of an egg. With the assistance of Drs. O'Hagan, Morgan and Brown he opened the bladder by a suprabubic operation and removed two stones and thought that everything had been removed, but, upon attempting to again insert the catheter, to their chagrin they found that it was not to be passed and that the same obstruction remained. The stone was so entirely encysted by the tissues that it had to be removed in pieces. The bladder was damaged badly and the incision made was rugged and it was feared that the patient would die from the shock or from peritonitis, but in a few days he was free from fever and did nicely with the exception of a purulent cystitis, and got well.

DISCUSSION.

Dr. Keen said he was very much interested in this paper. In trephining it was said that we must always think we have the thinnest possible skull. This quotation seemed indicative of the great fear that used to exist of wounding the membranes of the brain, and, while that might well exist in the days before antiseptic treatment, when a wound of the brain was so dangerous to the patient, in these days we have changed from all that. The introduction of antiseptic methods and the introduction of the flap method, instead of the old crucial incisions, have changed the whole aspect of intracranial surgery, and he did not hesitate to say, and he thought it would meet the approval of all present, that the brain should be treated with absolutely the same indifference that any other part of the body is treated; that incisions should be made with just as much readiness and the skull opened exactly as if it were any other part of the body. If pus collects in the abdominal cavity any surgeon would open the cavity in order to get it out, and there is no reason why the head should not be opened to let out pus, or for the removal of a tumor. The day is past when the brain was regarded as a land which must not be explored. He supposed that the commonest of all conditions that require the interference of the surgeon to-day in connection with the skull is fracture of the skull. In his day, as a student, it was thought that fractures of the skull ought to be almost absolutely let alone; but to-day, in fractures of the skull, no hesitation is had to trephining and

lifting up the scalp. Trephining, it must be remembered, is nothing more than making an incision in the soft parts. The saw is used instead of the knife because the bone is hard instead of soft like the flesh. Where is the man who, if there was a case of suppuration of the femur or tibia, would not trephine the femur and tibia and let the pus out? In the skull exactly the same conditions require the same treatment. In fact, there was vastly greater need for an incision in the skull than in the soft parts, for the pus would probably be able to get out anywhere else than in the skull—in the thigh or forearm it could probably work its way out, but in the skull it is almost an impossibility physically, and therefore it is the duty of the surgeon absolutely in these cases to open the skull, let out the pus and to lift up the depressed fragments of the bone lest they should produce eventually suppuration, meningitis or epilepsy. A compound fracture and a simple fracture are exactly on the same level. A man who uses absolute asepsis or antisepsis can explore a simple fracture with but slight danger. Sometimes the best surgeon meets with a misfortune; but the danger of doing so compared with the danger of letting the patient alone, is as nothing. It must be remembered that fractures through the orbit, through the base of the skull, through the mouth, through the nose or through the ear, when the membrani tympani is ruptured, are just as truly compound fracture as a fracture of the vault that can be seen, and are even more dangerous because they are hidden. The most complete asepsis must be used as can be had. It is true that the mouth or the nose cannot be absolutely disinfected. But just as in ordinary drugs the effect is in the proportion to the dose given, so in a compound fracture the effect is in proportion to the dose of septic bacteria. As nearly absolute asepsis must be obtained as possible, and the results will be very much better. In fact, the whole aspect of the subject has been changed since the introduction of aseptic methods. In the mouth and nose the solutions of mercury or carbolic acid that would be used elsewhere in the body cannot be used, but thorough cleansing with a normal salt solution can be done. This will remove a great deal of gross dirt and very much of the infected material. This is to be followed with boric acid solutions. Thus a comparative asepsis will be obtained that would be followed in many severe cases by recovery.

Another subject of a great deal of interest in this connection, of which Dr. Laughinghouse spoke, was that of hemorrhage. In this the localization is very important. There are a great number of cases now on record in which a man having received a blow on the head has been stunned by the blow or fall for a time, and then recovered for a time his consciousness, which may last for a few hours or days, and in some cases even a few weeks, and then he relapses into a second state of unconsciousness. It must not be understood that this occurs only in cases of fracture. He had seen recently two cases in which there was absolutely no fracture. A blow on the head had caused unconsciousness for a time followed by a period of consciousness and

then by a secondary unconsciousness. Now, this might be caused by the rupture of the middle meningeal artery. If the main trunk is ruptured or multiple small ruptures exist, there will be a large amount of blood effused very rapidly, and of course the symptoms of pressure will come quickly. It may be a small rupture that produces such an effect. The man is stunned by the blow, an artery is ruptured, a small amount of blood is poured out, which gradually accumulates, the patient being, however, conscious in the meanwhile; but when the clot has become large enough to produce pressure, the secondary unconsciousness comes on. In such cases trephining is our plain duty, and it should be done as soon as the diagnosis is made; if not, the patient will die in the vast majority of cases. There are 68 per cent. recorded of deaths without trephining and only 33 per cent. with trephining.

After the determination to trephine the question is as to the localization, which is of great importance to us. It is not always necessary to trephine on the same side of the skull that has received the blow or the cut, but it is often necessary to trephine on the opposite side. He related a case brought into the hospital a few years ago. The man had fallen on his head from a hay-loft and had two wounds in the scalp, one directly in the middle line and one a little to the left over the parietal bone. He was unconscious, and in that case he never recovered consciousness, because there were four ruptures and the blood had poured out so rapidly that there was not time for him to become conscious from the stunning before the secondary unconsciousness caused by the flow of the blood had come on. There was no need to use chloroform on account of his already being unconscious. He made an incision at both of these lacerated wounds, uncovered the skull and found no fracture at either point. The man was lying there perfectly relaxed, not moving hand or foot, and he concluded that there could be but one cause that produced such profound and persistent unconsciousness, namely, a rupture of the middle meningeal artery. The patient did not move either arm or leg, and therefore he could not tell whether the right or the left side was paralyzed. On examining the pupils, however, both of which were sluggish, he found the sluggishness of the left pupil somewhat more marked than that of the right. He concluded to trephine on the left side, and if the clot was not found then, to seek for it on the right. He trephined on the left side $1\frac{1}{4}$ inches from the external angular process on a line with the eye-brow. The instant the skull was opened an enormous clot of blood began to ooze out, and he found two ruptures in the anterior branch of the middle meningeal artery. The clot was very large, and on removing it he found the artery still bleeding; he therefore concluded that the posterior branch was ruptured as well, and he trephined the man a second time, finding two ruptures in the posterior branch. This case he brought before the Society, not because the man got well, for he did not, but because of the diagnosis, for, after all, most of us know what to do when the diagnosis is established.

He said that in his opinion diagnosis was far more important to teach than the treatment, because the treatment could be had from any text-book. He had performed not very long ago an operation for the removal of the gasserian ganglion in a case of tic douloureux. He had chiseled through the external table. Right at this point he desired to say that the chisel should not be used, but the *osteotome*, because its being wedge-shaped renders it unlikely that the end will be driven farther in than one wishes, while the chisel can go to any depth. He was very careful about striking the blows in the above-mentioned operation, but the chisel was driven into the brain to the depth of an inch. Instantly a furious gush of blood followed, showing that he had cut the posterior branch of the middle meningeal artery, and he had not yet turned down the flap. He rapidly loosened the rest of the flap, and on turning it down he found, to his dismay, that the anterior branch of the middle meningeal was also ruptured, because it went through in a canal in the anterior inferior angle of the parietal bone. He put two fingers on the ruptured arteries until he could get a curved Hagedorn needle. An assistant controlled the anterior branch and he encircled the posterior branch and then the anterior with a ligature. He was glad to say that the patient made an uneventful recovery in spite of the great loss of blood he had from this untoward accident.

Dr. Bahnson described three of the last five cases in trephining that had occurred in his practice. The first was for a slightly penetrating wound, the result of a blow on the left of the middle line over the parietal bone. The boy was about 21, and he informed the physician that he had not been stunned and did not feel sick in any way. He had walked home, a mile or two, and sent for a physician. Nothing of moment occurred, and he seemed so well that the physician left him until the following evening. The only thing that the young fellow complained of was a paralysis of the flexors of the right forearm, and, with the exception of a very small puncture in the skin, there was nothing to be felt. An opening not exceeding one-third of an inch in diameter was made in the skull and a wedge-shaped spicule of bone was found driven down upon the dura mater. It was necessary to enlarge the opening in order to get it loose from its attachments. There were no brain symptoms, only localized paralysis. He entertained no doubt but that he would have suffered from it had it not been attended to.

The second was that of a child, who fell from a loft, striking on her head. She was semi-conscious and sometimes uttered a word or two in a far-off kind of way. There was no involuntary action of the bladder and paralysis of the sphincter muscle, and no nausea or anything of that kind. There had elapsed three or four days, and, on account of the general sluggishness of the patient, they decided to operate. A very large clot of blood was found under the scalp on top of the head, with a fracture parallel with the middle line of about three inches—nothing else; no depression, absolutely none.

But they decided to cut through, and there was found an immense clot of blood between the dura mater and the skull, which was removed with the finger. The pressure being removed, the child made a perfect recovery, and is well to-day.

The third case was a young boy who had been struck by the hoof of a horse and no external wound, even, could be discovered. The boy was bright and lively, but on palpation a slight depression was noticed. An incision was made, knowing that it could do no harm, and a slight depression was found in the outer table. He trephined alongside the depression, intending to raise up the fractured spot, and to their surprise they found enough of the internal table broken and split in every direction to cover the palm of the hand, some sticking straight down and pressing upon the dura mater. It was an extensive fracture. The little fellow could not be kept in the house and was soon well.

He wished Dr. Keen to emphasize several points—that it is a manifest duty, whether there be an external opening through the scalp or not, in a case of brain injury, to cut down and make an ocular examination of the skull. If he finds a fracture without a depression it would probably be a matter to wait upon; if there is the slightest evidence of any, if there are any brain symptoms, or local paralysis, or any conditions which might be caused from pressure due to the effusion of blood, he ought to trephine forthwith, and not to treat it as heretofore; also that it is very hard to injure the membranes of the brain with reasonable care in operating; it would be very difficult to injure even a sinus; and with ordinary care there is nothing for a man to dread in trephining. It is better to go into the scalp and relieve the brain than to wait until it might be too late to do any good by the investigation.

In answer to Dr. Bahnson, Dr. Keen said that he especially commended what Dr. Bahnson had said in reference to operations of the brain No surgeon who will take care as to antiseptic methods and will shave the head and disinfect it thoroughly, need be afraid of an incision through the scalp. He had seen case after case which from the want of such an incision the fracture had been overlooked. The only way to do is to cut down and find out when we do not know, and with strict asepsis no harm is done. If there be a fracture it is of the utmost importance that it should be known as early as possible. He agreed with Dr. Bahnson mostly in reference to the method of trephining. A surgeon ought to be careful when trephining, but with the ordinary care of the ordinary surgeon he did not believe that there was danger of wounding the dura. Should the instrument go into the dura, it is not at all necessarily a vital point. Of course no one should trephine over a sinus if he can get alongside of it. He always got as far away from the sinus as possible, but if necessary he would not hesitate to go near it or even over it. He had in several instances trephined near the sinus and separated

the dura until the whole of the sinus was free from the skull for several inches.

If we wait to trephine until symptoms occur, infection has probably already taken place. He operated as early as he could in all cases. He thought that in certain cases no one could absolutely determine the existence of a fracture or fissure—it can simply be suspected. If he found a fracture with brain symptoms, or even a fracture without cerebral symptoms in which there was much depression, he would certainly make an incision through the scalp.

Dr. Hodges desired to express his interest in the subject, and to call the attention of the Society to cerebral surgery in its relation to traumatic epilepsy, and desired to ask the Society to bear the subject in mind during the year, and, if occasion should present itself, to operate and let the world know the result. As all know, it is occupying a prominent position in the profession.

He was glad to see Dr. Keen present, and said that he had had the pleasure of seeing one of his cases of this character very recently. He himself had operated upon five cases of traumatic epilepsy with the hope of curing them. He considered this treatment as worthy of the attention of physicians and surgeons everywhere. He was sure that all could do the operation as recommended by Dr. Keen, though it was another question about going down into the cerebral mass, though that was indicated at times.

The five cases presumably due to traumatism upon which he had operated during the past year had given him great cause for encouragement. While he knew the statistics on this subject, still he believed that there are great hopes along this line, and he was especially desirous that the surgeons of this Society, when they have cases of epilepsy probably due to traumatic injury of any kind, will investigate and see what can be done.

He mentioned one of the five cases in order to show that, although the time of injury had been very distant, still there are hopes of recovery. This man was fifty-six years old when operated upon. He was in the late war, and in the third days' fight at Chancellorsville a ball struck him in the head and he fell unconscious, and the battle and the subsequent events were of no importance to him, as he recollected nothing afterwards. For a time his mental faculties were disturbed and one year from the injury he commenced having epilepsy, and up to several months ago had had epileptic fits almost constantly. He was operated on simply with the possible hope that the epileptic attacks might be checked. Only a slight injury was found on the internal table, but the patient was so relieved that he has only had three attacks since. On the afternoon of the second day after the operation the man began to recall the scene of the battle which he had been in.

Dr. Hodges said that if he had not related it with so vivid an interest and taken such pleasure in narrating it to him, he would not have believed but that the man had remembered it before and was faking. It had been blotted

from the man's mind for all those years. The man is now at work for the first time in ten years. Trephining for epilepsy offers great hopes, in his opinion, for the future, as a source of the removal of at least some of the causes of this disease, especially where it is possibly due to traumatism.

Of these five cases operated upon, three have been benefited and two have not; but that seemed to him some index of what might be expected in the future.

Dr. Murphy related a case that was brought to the State Hospital in Stanton, Virginia, when he was a physician there. It was a case of depression on the side of the head, and they started to trephine. The bone was removed and there was no evidence of any pressure on the internal table. About that time politics got into the Institution and the administration was removed before the man recovered from the operation. After the new administration came in he was so much improved that he was discharged as recovered. He went home and remained several months and killed his wife and two children and was immediately returned to the Institution. In a discussion in the American Medical and Surgical Association on this subject, a number of cases were given, and to his recollection there was not a single successful case, and that has given it such a backset among societies and hospitals that it is no longer practiced. He did not remember the particular matter for which trephining was done in any case, but he knew that the result was the same in all. There was no permanent benefit. All his cases were in insane patients.

He did not wish to discourage anyone in regard to trephining. His experience had been limited.

CORNEAL ULCERS.

By W. H. Wakefield, M.D., Charlotte, N. C.

I hope those of my hearers who are good anatomists, those who have retentive memories, never forgetting an anatomical fact, will pardon me for acting on the assumption that many doctors do forget anatomy, and presenting you with a rehash of the anatomy of the cornea as a prelude to what I shall say concerning corneal ulcers.

Anatomists divide the cornea into five distinct layers, the outer one of which is a continuation of the conjunctiva and forms the anterior epithelial coat. Beneath this is Bowman's membrane; next we find the proper substance of the cornea or stroma, then Descemet's membrane and finally the posterior epithelium.

At this point, I pause to say that any injury to the cornea involving only the anterior epithelium heals without leaving a trace behind, but if the injury be sufficiently deep to destroy Bowman's membrane, a scar will result.

The cornea, at its margin, abuts against three membranes, viz: The conjunctive, the sclera and the uvea.

Embryology teaches that the cornea consists of three superimposed layers, each of which corresponds to one of the membranes adjacent, and may be said to represent its continuation over the most anterior portion of the eyeball.

Hence, the cornea consists of three divisions, a conjunctival, a scleral and a uveal. The anterior epithelium forms the conjuntival portion, Descemet's membrane and the posterior epithelium belong to the uvea while the entire stroma and Bowman's membrane represent the continuation of the sclera.

The vessels all terminate at the corneal margin forming the net work of marginal loops from which the nutritive plasma passes into the cornea through its system of lymph passages. The nerves are numerous, particularly in the outer layers, hence the extreme sensitiveness of the cornea.

Situated, as it is, in the opening between the lids, forming the most anterior part of the eye-ball, the cornea is extremely liable to injury, and, as its nourishment is derived from blood vessels situated without its tissue, it is particularly prone to become diseased in conditions of the body characterized by a deterioration of the blood—as in scrofula, specific disease etc.

The definition of ulcer, learned when we were students of medicine will apply to this process in the cornea.

The development of a corneal ulcer is always preceeded by a suppurative inflammation of corneal tissue. The spot at which the ulcer develops becomes dull and cloudy owing to the infiltration of the part, and soon, by

the breaking down of the most strongly infiltrated portion, a loss of substance is sustained and an ulcer is produced. While the ulcer is in the progressive stage its walls are surrounded for quite a distance by a gray area or slender gray striæ are observed to extend from it into the transparent tissue. In a favorable case, only so much of the cornea break down during the progress of the disease, as was from the first too strongly infiltrated to live. In this event the ulcer rapidly becomes clean without assuming great dimensions.

But not so with all cases. It not infrequently happens that the inflammatory cloudiness keeps spreading, adjoining portions of the cornea being constantly added to the infiltrated area, and as these break down into pus the ulcer grows larger. In some cases the progressive growth takes place more in depth, and in others more along the surface. In the former case, perforation of the cornea is to be apprehended, while in the latter. larger areas of the cornea will be destroyed and extensive opacities will result, seriously interfering with the vision.

During the progressive stage of the ulcer, symptoms of intense irritation are usually present, such as excessive lachrymation, deep injection of the vessels and a decided pain which is augmented by admitting light into the eye. It should not be forgotten that in this stage the iris is liable to become involved in the inflammatory process. Not all cases of corneal ulcer, however present these irritative symptoms. There is a somewhat rare and dangerous form, termed torpid or asthenic ulcers in which the irritative symptoms are very slight.

Etiologically speaking, inflammations of the cornea resulting in ulcer may be divided into two great groups; primary and secondary. By primary ulcer, we understand those having their origin in the cornea itself, as for example, those due to traumatism, the action of caustics, absolute glaucoma, the breaking down of scar tissue or the rupture of a corneal abscess anteriorly. The secondary ulcers are the result of an affection of the conjunctiva, as in acute infections, conjunctivitis and phlyctenular keratitis.

On seeing a patient presenting such symptoms, which taken in connection with the history of the case, would lead you to suspect an ulcerated condition of the cornea, a very careful examination of the entire cornea should be made by means of oblique illumination. This is best accomplished by seating your patient in a chair, taking your stand behind him having him lean his head well backward. Now, with a condensing glass, focus upon the cornea the rays of light from a lamp situated about 14 to 16 inches from the side of the patient's head. In this manner you can locate with nice precision all the points of infiltration and also determine whether or not a foreign body be imbedded in the cornea. In young children it is best to have the little sufferer laid on its back with its head on your knees and its body on the lap of a second person sitting opposite you.

Care must be exercised not to make any pressure on the globe as it is not necessary and will cause pain, besides, if the ulcer be a deep one rupture of its floor may take place.

In a twenty minute paper it is not possible to describe all the different forms of corneal ulcers, hence I will confine myself to those most frequently seen.

In my experience, the most frequently observed form of corneal ulcer is that called phlyctenular by some authors and keratitis vascularis by others, and most frequently observed in children. Photophobia is usually a well marked symptom of these cases, the little sufferer seeks a dark corner of the room or sits with drooping head and closed eyes. On inspection we find, usually near the margin, one or more points of infiltration from which a triangular leash of twisted vessels extends onto the conjunctiva. There is more or less injection of the entire conjunctiva but these triangular areas are more deeply tinged than the surrounding parts. This form of ulcer always begins at the corneal margin and its tendency is to advance toward the centre of the cornea, drawing after it, its leash of vessels. As it advances, healing takes place on its its scleral edge under the vessels. When the ulcer has healed these vessels disappear and the site of the ulcer is marked by a glistening white streak of cicatrical tissue extending from the margin as far inward as the disease progressed. Recurrences are not infrequent and we often see these little sufferers bearing around with them the scars of past ulcers. Owing to the tender age of many of these suffering from this form of disease, it is often a difficult task to obtain even a hurried glance of the cornea, and I have, in a few instances, been forced to administer a general anesthetic before inspection of the eyes could be made. A drop or two of a freshly prepared 4 p. c. solution of cocaine is a great aid in making examination of inflamed eyes as it relieves the pain and in some degree the photophobia. Right here, I wish to protest against the frequent and continous application of cocaine in these cases for the relief of pain. It has a disintergrating action on the epithelial coat and causes its exfoliation, hence, its use is mischievous. In the treatment of phlyctenular ulcers a 2 to 4 grain solution of atropine will lessen the irritation. It should not be lost sight of that atropine is a powerful poison and that an over dose can be administered through the eyes. The object to be accomplished by its application is the full dilatation of the pupil and a single drop of 2 grain sol. applied to the eye night and morning will certainly do this unless iritis has supervened.

Calomel and the yellow oxide of mercury are also useful. The calomel may be dusted in the eye while the yellow oxide is best administered in the form of a salve, 1 grain to 1 dram of vaselene.

These agents are irritants, calomel being the milder of the two, hence, in the beginning of the disease when the eyes are in a state of active irritation it is best to apply the milder agent reserving the more active drug for use

later on when active stimulation will be needed. I have, of late, used a mixture of boric acid and iodoform with more satisfaction than the preparations of mercury. In the earliest stages I use boric acid 2 grains, iodoform 5 grains, vaselene one drachm. These are well rubbed together and a small piece is placed in the eye three times daily. Later on, the amount of boric acid is increased to 3 grains then to 5.

Patients suffering from phlyctenular keratitis require general as well as local treatment. Cod liver oil, fresh air, iodide of iron, sunshine, arsenic, more fresh air, hypothosphites and more sunshine are indicated. I desire to raise my voice against confining these sufferers in a dark room. They need fresh air and sunshine, two of the best tonics known. Of course the eyes must be shaded, perhaps closed and a bandage placed over them. I advise my phlyctenular patients to take buggy rides when they can, to ride on the open electric cars found in our large towns, at any rate to bathe in the sunshine and inhale air out of doors.

In the primary ulcer, due to either traumatism or the breaking down of corneal tissue from other causes, atropine plays a very important part in the treatment. In this class, the boric acid and iodoform ointment is indicated and has afforded better results in my cases than any other agent that I have used. If pain is a marked symptom, a bandage will not infrequently relieve it by preventing the movement of the lids over the eye and the consequent injury to the nerve fibres exposed in the ulcer. Hot applications are of service to ally pain. Remember *hot*, not *warm*.

If the progress is not stayed by these measures, cocainize the eye and with a delicate curette scrape away the infiltrated edges of the ulcer on the side toward which it is advancing. The same parts may be touched by the incandesent electrode, but I prefer to curette first. Should the extension be downward into the corneal tissue, the curette should be carefully used to clear away the tissue on the floor of the ulcer. If perforation be imminent it can often be prevented by thrusting the blade of a cataract knife through the healthy cornea and drawing off the aqueous, thus relieving the pressure. This expedient may be repeated frequently.

In all corneal ulcers the conjunctival sack should be cleansed frequently by dropping into the eye several drops of a solution of antiseptic astringents. A favorite of mine for this purpose is

Acid boric.	12 grs.
Sodi chloride. . . .	5 grs.
Aqua camphor. . . .	1 dr.
Aqua pura, q. s. . .	1 oz.—M.

Of this 8 to 10 drops are put in the eye three to six times daily. This can be used in the early stages without causing pain or increasing irritation.

Later on, when stimulation is need, it is well to use more active agents, and I suggest the following:

Zinc sulph.	½ gr.
Ammonia chlori. . . .	½ gr.
Aqua pura.	1m.

Put two drops in the eye twice daily. If this is found to cause pain it should be diluted one half. Sugar of lead should not be applied to eyes affected with ulcers as the lead is deposited in the ulcer and increased opacities are the result. In glaucomatous ulcers atropine is not indicated. It should not be used in the eyes of old persons excepting in rare instances, hence we must rely on other agents to combat the ulcerative process. The agents named and the treatment outlined are those that I have found the most useful, but many other agents have value and should be used if the progress of the disease is not checked by the treatment that has been advised.

Whatever be the agents used, we should ever keep in mind the fact that, rest of the part is of prime importance and this should be given by means of atropine unless some contra indication to the use of atropine exists.

Antiseptic applications as soothing as possible are indicated in the early irritative stages, while stimulating agents are required in the latter stages to encourage the complete filling of the depression caused by the loss of tissue.

As the majority of patients suffering from corneal ulcer, not clearly traumatic in character, have some constitutional dyscrasia or are run down in health. general tonic and supportive treatment should be instituted.

A REPORT OF A CASE OF CHRONIC PURULENT OTITIS MEDIA.

By S. J. Montague, M.D., Winston, N. C.

A catarrhal or suppurative discharge from the ear is a very common condition of childhood. Because it is so frequent and so generally lightly regarded by parents and even physicians, and neglect of treatment is so frequently followed by deafness or what is even worse, cerebral meningitis and death, I have thought it worth while to report the following case:

Keating in his "Diseases of Children" says: Of all the cases of suppurative meningitis, ear disease is probably the most frequent. There are many intercommunications between the ear and the petrous portion of the temporal bone, by means of arteries and veins and connective tissue, passing from the dura mater through the petro-squamous fissure to the mucous membrane of the tympanum and the mastoid cells and containing large branches of the meningeal artery and vein.

On February 25th, 1895 about 4 o'clock a. m. I was hurriedly called to see Eddie L. a boy 9 years old. I found him unconscious but with a good pulse, eyes sensitive and pupils dilated. I was informed by his father, with whom he was sleeping that he went to bed the previous evening in good health, except for a discharge from his left ear which had stopped discharging that night, that he had suffered with a discharge from both ears, following scarlatina at the age of two, with occasional temporary cessations until six months ago when the right ear seemed to have healed. He was partly deaf as the result of the otitis but otherwise his health was good. The sterterous breathing of the boy had awakened him and when he could not arouse him he sent for me. I gave him some calomel and castor oil and a large enema of turpentine soap and water and bled him by an incision on the mastoid process. A copius discharge of fecal matter soon followed with a return of consciousness. The external auditory canal was nearly occluded by swelling and I endeavored by injecting into it warm water to start up the discharge again but without effect. I then put into the meatus warm carbolized sweet oil and on top of this borated cotton which was agreeable to him. Then I put him on bromide potash and ergot every two hours, uuder which he brightened up and his condition improved, but there was no discharge from the ear. On the next day (26th,) he had slight fever, chills and headache, which I treated with quinine acetanalide etc., and put in a seton of corbolized thread behind his ear, which however did no good as he soon tore it out and the slits quickly healed. On the 27th, he did tolerably well and on the 28th, seemed to be getting on as well as conld be expected under the general and local treatment when about 10 a. m. he had a chill, and the fever suddenly

became higher and the left leg was found to be completely paralysed, pulse feeble and rapid, and he went into a state of semi.unconsciousness. On arriving at the house one hour after this I found some swelling over and about the mastoid process, and cutting through the skin let out a quantity of dark, bad smelling pus, much to his relief. At 4 p. m. of the same day he had another slight chill followed by a temperature of 102½°, and slight paralysis of the left arm. March 1st, neither ear nor incision over mastoid process as discharging at all and his pulse went up to 150, pupils dilated, eyes drawn up and he was in a delirious state of mind, with temperature 101° at 3 p. m. of the same day he turned very pale in his face and his pulse could not be counted. At this time Dr. Fearington, of Winston, saw him with me and we concluded that his time was very short, however at 6 p. m, his ear began to discharge and his nose to bleed, both of these symptoms I encouraged. He became brighter, pulse fell to 120 and temperature to 101° and he took some nourishment. This betterment was illusary as he soon began to decline and quietly died about 1 a. m. March 2d, six days from the attack.

DISCUSSION.

Dr. Lewis, emphasized the importance of immediate attention to cases where suppuration takes place. Parents often make mistakes in neglecting to have the child treated for what are called common cases. It seems to him that in the case above recited, when the doctor was called in that it was almost hopeless. He should have cut into the mastoid process and possibly the puss might have been let out sooner, but he doubted very much whether that would have made any difference in the final result of the case.

Suppuration in the middle ear should be treated thoroughly and promptly.

The case of that boy had been going on for some six years and when he went to bed he was probably as well off as he had been a long time before, and then suddenly he went off into this condition, that was probably irremediable under any treatment. Parents should treat risings in the head immediately or they risk the life of their children, and it is their responsibility, no specialist is necessary, only the family physician is needed.

Dr. Montague, stated that he had suspected the trouble to be with the mastoid process, but after careful examination could find no evidence of such and he had been surprised that it turned out that way.

DIETETIC REGIMEN IN THE TREATMENT OF DISEASE.

By R. J. Grimes, M.D., Bethel, N. C.

In considering the many tragic scenes daily enacted upon the broad stage of human action; if I were asked to designate one of the most potential factors, powerful in production of death, hideous as a cause of disease and unoappiness, and wonderful in some cases even to drive men to suicide. I should unhesitatingly answer that improper food, or the continual ingestion of such food as could not be properly digested and assimilated, is as fully able as any thing to fill this unenviable position.

In this assertion I need not include alcohol, for even this, methinks, pales into insignificance when compared with the enormous effect produced by the above recited evil. In the one case the monster proceeds noiselessly, melancholly attends its footsteps and even the observant physician in many cases fails to recognize its footprints. In the other the mighty demon raises his shaggy head and brazen face aloof and his effrontery effects such conspicuousness that no one can fail to preceive the evil doer.

The premises would justify quite a thesis, nevertheless I shall not essay to do more than to present a few desultory outlines of this important subject which has been forcibly suggested to my mind as they occur in my daily practice.

In reference to childhood, it would be difficult to overestimate the importance of this subject. What a pity! Yet it must be said that many millions of these little victims die yearly because of mother's love, the suffering of the babes intensify this love and with frantic effort she endeavors to administer to every want, too weak to withhold the missile which causes the green monster to enter the household.

In the writings of no less personage than Dr's. Barthez and Cummings, and others of equal celebrity, the authors declare that they meet with such success in the raising of motherless children by the intelligent exhibition of pepsin and proper diet, that they now rarely advise a wet nurse. Armed with such authority as this, I do not fear criticism when I assert that in my opinion the mother's of our land would be astounded could they know the number of deaths on account of their lack of a proper understanding of the subject.

Every one knows how hard it is to raise the little child bereft of its mother's breast. If it is true that these little sufferers can be saved according to the excellent authority above mentioned. How can we longer doubt that the many millions of deaths from diseases, caused by a lack of understanding of this subject, is but a ruthless and alarming fact, which should be eradicated from a civilized land?

The writer has vividly in his mind now a little sufferer which he saw a short time since, which forcibly illustrates the fact. I found the child terribly emaciated and suffering with the worst case of ascites I ever saw. The child, 5 years of age, presented truly a pitiable spectacle. Her mother stated that she and her father had assiduously administered to the wants of the child for eleven months, both day and night, that she had tried the doctors until she had entirely lost all hope, and they too had added to her despondency by stating that they could not cure the ehild. After a hasty examination of the vital organs, I made the surprising announcment to the mother that the child's condition was simuly the result of a treatment at her hands which she was then administering in my presence, viz: The child had both hands filled with candy, besides an abundance of fresh pork which it was then eating from the hands of the mother. The child made a hasty recovery to the astonishment and great delight of the family.

It would be well here to notice the investigations of Epstein and others, who have conclusively proven that the amount of peptone formed in the stomach of the child is almost nil. Accepting this as a fact we can appreciate the importance of administering pepsin to the child, not only in disease, but also in health as well. More especially when food is administered other than milk.

In order that we may fully appreciate the importance of this subject, we might with profit notice the physiological and anatomical relations of the alimentary canal. In the normal condition we find the small intestines wonderfully and delicately arranged. The contents consisting of chyle and excrement fully digested and in a liquid state, which trickles slowly and evenly through the intestine by gravity alone. The walls are distended with healthy gases, so as to present the best possible condition for the even passage of the liquid contents over the villi that the lacteals may more perfectly absorb the chyle, which process is quite completed by the time the contents reache the ileo-cæcal valve. The arrangement of the muscular tissue, the non-sacculated appearance of the gut indicates that it has but feeble powers of peristalsis. Hence we conclude that any solid or semi-solid contents of the small intestines are abnormal and capable of producing disease, and futher, that should the small intestines become filled with such contents, even without impaction, the gut would not have power to relieve itself.

On the other hand, the large intestines indicate peristalsis and are to all appearence the store house of the excrementitions portion of the food, thereby preventing the necessity of constant defecation. The sacculi, the arrangement of the muscular tissue in bands, the ileo-cæcal valve to prevent backward movements of the excrement during peristaltic action of the large gut, all show the powers of the gut to empty itself of its semi-solid contents.

From the above observation we may easily recognize the importance of dietetic regimen in the treatment of disease and how detrimental it is for badly digested food to pass as a foreign body over the inflamed villi of the small intestines and contrary to nature's laws, to enter the large intestines without extraction of the chyle, which decomposes and engenders poisonous gases with their attending ills.

For fear of the criticism that I am theorizing; I will delineate as briefly as possible the following laparotomies which I performed a short time since which seems to confirm the above conclusions.

The first patient was seen on Saturday evening, suffering with occasional colic, during the night he grew very much worse and on Sunday morning he began to vomit and all the signs of acute bowel obstruction rapidly developed. By 1 o'clock his condition grew so alarming that it was apparent to all, that the patient without speedy relief must die. At 1 o'clock I operated and found the gut loosely filled with grape seed for about eight inches above the ileo-cæcal valve. There was no impaction and the obstruction was easily removed. I found the gut distinctly discolored and highly inflamed. After the operation diarrhœa set in so intensely that no one thought the patient could possibly live.

I found in the second patient, complete bowel obstruction of six days standing, during which time she had suffered intensely. I operated and found the bowels obstructed with several bands on the exterior of the gut and notwithstanding the length of time, the bowel was of normal color and no inflammation. The patient was at once relieved of her suffering and in twenty-four hours had a normal action from the bowels.

Here we have in the first instance, a very recent case with a foreign body loosely filling the small intestines, producing inflammation in twenty-four hours sufficient almost to cause death. In the second patient no abnormal contents within the gut. The obstruction being on the exterior, with six days of intense suffering, with bowel of normal color; resulting in immediate relief. These two patients seem to indicate clearly and forcibly the danger of indigestible food passing down the small intestine.

Before concluding this paper I desire to sound a warning note with as much emphasis as psssible against the indiscriminate and reckless use of milk diet. I am willing to accord to milk diet a mission of usefulness that it would be difficult, if not impossible to fill by any other known substance. Nevertheless I must insist that there is a time when this mission of usefulness not only ends, but becomes a factor of detriment and a vast deal of harm.

It may yet be believed by some that a king can do no harm; but to the observant mind it is known that by virtue of such high authority vast deal of damage may be inflicted.

In as much as milk contains all the elements necessary to sustain the tissues of the human body and being nature's prepared food. we can easily

see how the profession may be deceived in its enthusiasm as to merits of such a diet. At the same time we should remember that it is nature's diet for the young. Besides, when we notice the change which takes place in the digestion of the adnlt and the development of powers of mastication, it would seem to indicate that the adult needs a diet other than milk. Only a few years ago it was thought and generally accepted by the profession that in sterilized milk, we had a diet calculated to cure many cases of disease previously considered incurable. However, after the wave of enthusiasm had died away, it was proven by Leeds and Davis that such a diet was not only detrimental to the infant, but that the child so fed actually suffered a slow process of starvation.

It has been proven by Van Norden, that milk is badly assimilated in the adult, at least not so well as in the infaut. Dr. Emmerich Hertzka has proven conclusively that in the absence of hydrochloric acid, milk would ferment as well in the stomach as in the intestine and is therefore contraindicated, and further, that in severe forms of flatulence in disease preceded by severe diarrhœa, gastric dilatation or atony of the stomach, milk is not well borne.

Dr. White, of Guy's Hospital, has found in his observation of milk diet in Bright's disease, that milk is dificult to digest. He says that he has noticed that in patients fed upon milk diet, that it tends to dilate the stomach and causes constipation, and further that the theory that milk is less irritating for the kidneys than an ordinary diet, and that it contains fewer toxins, comes entirely from study and not from the bed side, and again he says that nothing is more striking than the alteration which takes place when a patient who has a feeble circulation from cardiac failure or bronchitis, and has been on milk diet for some, is put on an ordinary diet.

My own experience certainly corroborates the observations above stated and I feel quite sure that I have saved not a few lives by watching carefully the effect of milk diet.

In considering the rationalé of digestion and assimilation and the wonderful anatomical and physiological arrangement of the alimentry canal for the perfect consummation of this wonderful phenomenon, I decline to believe that any one would be so rash as to insist that milk in a clabbered state can pass with impunity over the diseased and inflamed mucous membrane of the intestine. Such a condition existing I have seen most striking and wonderful improvement in the patient, simply by stopping the milk diet and followed by a single dose of calomel and a diet of decoction and soda crackers.

Only a short time since I saw a patient almost in a moribund state who had been sick ten days, and fed with one quart of milk daily, with clabbered stools; simply by following the directions above stated the improvement was so striking that I could hardly realize it. In another case, under similar

conditions the improvement was as equally wonderful. But in this case the patient took within twenty-four hours one tablespoonful of milk which quickly caused a relapse and the family became very much alarmed. However I informed them that the patient would soon be convalesce as soon as I could relieve her of the milk, which was true.

I have no faith in pasteurized or boiled milk and have found that pure fresh raw milk is incapable of improvement except by the addition of pancreatin in above cases an alkali, and in cases of infants to simulate the milk of the mother as much as possible.

Van Norden, has proven conclusively that milk can be most satisfactorily assimilated when the stomach digestion is entirely excluded. Hence we can understand that the addition of pancreatin would be beneficial, which is also abundantly proven by Dr. Solis-Cohen at the bedside.

NEEDED LEGISLATION AND A PRACTICAL ENFORCEMENT OF EXISTING LAWS.

By James A. Burroughs, M.D., Asheville, N. C.

More than forty years ago a number of the best physicians of this State met at Raleigh, in convention, and organized the North Carolina Medical Association.

This Association appointed its first committee on legislation in the year of 1852, but did not obtain any legislation until 1859, which was the incorporation of this society, empowered to elect a Board of Examiners.

Much has been accomplished, through our committees, by the several assemblies.

We have a good State Board of Health, with numerous efficient county auxiliaries.

We have good marine, and inland sanitary regulations.

We have a law in this State regulating the practice of medicine, which if properly and rigidly enforced, is second to but few in the country.

While much has been accomplished in procuring legislation to protect our people from epidemics, and inefficient medical advisers, yet there is a large work to be done by this body.

The members of this Association are the custodians of the health of the citizens of this State.

We are the men that the people look to for the prevention of epidemics, and spread of epidemics. We must ever be on the alert, and be true to the confidence imposed in us by a loving, trusting public, and in order to do our duty we need a little more legislation, and a practical enforcement of that which we already have.

Several of the suggestions in this paper have been made, time and time again, by our committees on legislation. Their having failed to obtain the desired passage of certain proposed laws, is no reason for us to relinquish our efforts.

Vaccination, a Prerequisite to Entering Public Schools.

If there is one question above another, (and there is) to which our committee on legislation should pay especial attention, it is to that of vaccination. An appalling condition of affairs exists. This State is practically unprotected against small pox.

Practically no vaccination has been done since 1867–68. We have a population in this State of 1,700,000, and of a comparative estimate, more than a 1,000,000 are unprotected by vaccination.

If a tramp with a slight case of small pox, had entered the western portion of this State, from south-western Virginia last winter, or the winter before, and beat his way on a freight train to Wilmington, in ten days, or two weeks from the time he had entered the state, I doubt if enough vaccine could have been procured in time, to save the masses of our people from one of the greatest scourges any section ever experienced. Such a calamity would be a reflection on the medical profession of the State, as well as on the several legislative bodies that have failed to provide a relief. There are 602,000 children of the school age, between six and twenty-one years. We should have a law making vaccination a prerequsite to a child entering the public school. A law, making it a mesdemeanor, punishable by fine or imprisonment, for a teacher to allow a child to enter school without first presenting a certificate, signed by a regular physician, that he or she has been successfully vaccinated.

Each county Superintendent of Health should be amply provided with fresh vaccine points each year, and some physician appointed by the county commissioners to vaccinate the poorer class in every school district. This is the only way out of this dangerous condition of circumstances.

It will be an educational measure, and many of those who have passed the school age, and are unprotected, will consent to be vaccinated. This has been the experience of other states that have this law.

Let small pox once get into the state, and have us quarantined against the world, until the epidemic is suppressed, and business will suffer to the extent of millions of dollars, to say nothing of the loss of life, aud disfiguration of those who recover.

Arkansas had her turn last winter, and it was no pleasant experience; on each railroad entering Little Rock, at every station, a rope was stretched on either side of the track, and should a poor drummer get off, a health officer would place a hand upon his back and demand a "health certificate," in default of which, he was commanded to "crawl back and move on."

A question arises as to cost of vaccine; enough to protect 602,000 children, on the start, to say nothing of the future annual demand. At ten cents a point it would be $60.000. The State Board of Health could doubtless make a contract with some vaccine farm, for half that amount, but $30.000 would be so large a sum, that it is highly probable the bill would be defeated.

I think it best to memorialize the legislature for an appropriation for a sufficient sum to establish a vaccine farm, to be owned by the State, and under the control of the State Board of Health. Enough vaccine could be produced, from a small herd of heifers, at a nominal cost, to supply each county Superintendent of Health. It is more than possible that enough vaccine could be sold out-side of the State, to cover the expenses of our enterprise. In connection with this State vaccine farm idea, I also wish to suggest the advisability of a stable of horses for the production of diphtheria

anti-toxines. The Board of Health could employ one veterinary surgeon and bacteriologist to overlook each. The injection of diphtheria anti-toxines for the immunizing, and curing of diphtheria, has so far furnished the best statistics of any previous treatment.

The present price of diphtheria anti-toxines is so great, that few physicians keep the fluids, and they are disinclined to inject from eight to twelve dollars worth of medicine under the skin of a patient, from whom, in many instances, he will not receive renumeration, even for services.

An appropriation of $25.000 would start and defray the expenses of a vaccine and diphtheria anti-toxines institution equal to the demand of the State for the first year, after which, the expenses of same, would not exceed half that amount. I am satisfied that a State institution as mentioned, is the most practical and economical way to supply each county Superintendent of Health, and reach the individual public. A careful calculation shows me that the Board of Health could realize a profit on the serum produced, sufficient to reimburse the State for all expenditures. I wish to add that no State has succeeded in vaccinating its people in any other way, than making it a prerequsite to entering public schools, except when under martial law, or the presence of small pox actually existing. There should also be an enacment, making it a crime, punishable by fine or imprisonment, for any person to use humanized virus, for reasons too well known by the profession. The use of humanized virus during, and immediately after our late civil war, which frequently consisted of the pus of a syphilitic, impregnated with tubercule bacilli, is the reason for much of the prejudice that now exists in the public mind against this great sanitary measure.

Legislation to Prevent Tuberculosis.

Some legislation should be enacted to prevent the increase of tuberculosis. This disease is certainly on the increase in this State, as well as throughout the civilized world. In ante-bellum days when the colored population was happy on the old plantation, consumption was almost unknown to this race. How different now. In the annual report of the Secretary of the Board of Health for 1894 we find that about one sixth of the deaths among these people, is due to tuberculosis. From the same official report we observe that one tenth of the white population succumbed to teberculosis. This state of facts exist, notwithstanding we know that tuberculosis can be prevented. With a sufficient appropriation from the State, and proper legislation, we can practically exterminate this deadly monster.

I come from a section of this State whose mountains reach up into the clean, clear blue sky, whose atmosphere is slow to support germ life, and where consumption among its natives, was practically unknown until within the past few years. Now I notice, occasionally, cases of tuberculosis developing in these old families, whose histories are free from any tubercu-

lar tendencies There is a cause for this, and that is, they have become infected from the bacilli in the dried sputum of consumptive visitors who have not exercised proper care in destroying their expectorations. These cases are rare in my section, but they do exist, and I now have more than one patient under my care who contracted the trouble in this way.

Tuberculosis is an infectious disease, and should be so classified, amenable to the Board of Health laws regulating infectious diseases, with certain restrictions. As soon as microscopical examination of the sputum reveals the existence of bacillus, the patient should be reported to the county Superintendent of Health to be registered, and he should furnish printed instructions to patient and nurse, detailing every precaution, to prevent infecting others. If those who live with the patient knew the danger of not observing these sanitary precautions, they would see that all instructions through the physician, by the Board of Health, were rigidly enforced. A failure on the part of attending physicians to report such cases promptly, should subject him to the punishment prescribed, in failing to report other infectious diseases.

There should be a state home for the consumptives, so that all our county homes could be freed of this class of patients, and the poor lower classes who live in cellers and unsanitary quarters, could be removed. This State provides for its insane, to keep them from injuring themselves and others, with the hope of benefiting and curing an uncertain per cent. For this same reason there should be a State appropriation, sufficient to erect a home for consumptives. Some of the States have already appropriations for the erection of homes of this kind. In the judgment of some of the best medical men of the State, such a home is greatly needed, and if established in the mountains of the western portion of the State, good results would be accomplished beyond the most sanguine expectations. Early cases of tuberculosis are curable, and many cases in the second stage can be arrested, and life prolonged.

A Law to Prevent Blindness.

Much has been said of late, in leading journals of the country on the subject—Ophthalmia Neonatorum. In the 1894 report of Secretary of State Board of Health, it was strongly urged that our committee on legislation should insist upon the passage of an act, by our 1895 legislature, looking to the prevention of blindness.

Ophthalmia Neonatorum is largely a preventable disease, at least curable, if noticed in the first stages. If left to the tender mercies of an ignorant mid-wife, softening and ulceration of the cornea, in many instances will result, leaving the child disfigured forever and hopelessly blind. It is true that some of these cases recover without treatment, but they are in the minority, and the physician who can look at these cases, and decide which will recover, and will be left without sight, has yet to be born.

It is a religious, humane, and professional duty, that this Association owes the unborn children of this State, for it to secure proper legislation, to protect them against blindness. Nothing short of an act, requiring a registration by Superior Court Clerk, of all mid-wives, who present a certificate of proficiency, from local examining boards, (appointed or elected by the same, for this purpose) will have a tendency to check this trouble. These mid-wives should be subjected to a fine or imprisonmeut, if they fail to report to a physicion, the first redness, or suppuration of child's eyes within twenty-four hours from their first observing it. The above is the embodiment of the New York and Massachusetts law and after a careful review of the matter, I do not see but that it is the best and only way to prevent these deplorable cases.

Educational Requirements, a Prerequisite to Register for Examination.

After 1900, a diploma or certificate of proficiency from some reputable college, or university, should be a prerequsite for an examination to practice, by our State Board of Examiners.

The best medical colleges of the country in the last few years have required this proficiency before matriculating. The great state of New York has such a law, which was enforced last year, with the result that 40 per cent. less applied for license to practice, than in the preceding year. A number of young men of deficient literary education receive the degree of M.D., at third rate colleges, and apply to various State Boards of Examiners, for license to practice, when in reality, they have never been prepared to study the science with all its complicated theories.

An act as above mentioned will give the State, in a few years a larger number of better educated physicians, aud will prevent ambitious young men taking up medicine, until they are prepared to study the great science to the best advantage.

A State Law for Collecting Vital and Mortuary Statistics.

The plan of collecting vital and mortuary statistics by the Secretary of the Board of Health, through its county Superintendent of health, is a good one, provided he is in possession of the facts to transmit to State Secretary. Last year we received the statistics of twenty-nine towns with a population of 144,000, which is only one twelfth of our inhabitants. In order to have a complete return of vital statistics, it is only necessary to register mid-wives (as previously suggested) as licensed physicians are reqnired, and make it alike, a misdemeanor, punishable by fine, and a revoke of license should they fail to report each case in their practice, once every month to county Superintendent of Health. The only way I see to collect the mortuary statistics, is for each Board of County Commissioners to devise one or more township cemeteries, with a person in charge of each, requring a death

certificate filled out by attending physician, or county Superintendent of Health. This crude idea of burying our dead in the corner of the garden, or the neighboring church yard must go, and a convenient sites for cemeteries be chosen, that will not contaminate private or public water supplies. If suitable legislation on the above suggestion can be obtained, North Carolina will have the best and most reliable collection of vital and mortuary statistics of any state in the Union.

An Amendment to Act, Protecting Water Sheds.

An act is needed for a better protection of water sheds that supply towns and factories. In my judgment, a water shed supplying a collection of people, should be under the direct supervision of the county Superintendent of Health, that the law providing for the protection from contamination be posted at the most advisable points along said water sheds, so as to enlighten and educate the people in the right direction. Many families have their pig pens draining, and empty their slops and garbage into these waters, because they are totally ignorant of the existing law, and know not the danger which threatens to the people below.

The connty Superintendent of Health should examine, or have examined, the water supplying such a collection of people, at least once a month, and in this way we will avoid these little outbreaks of typhoid fever and dysentery, that are occasionally experienced at various points in the State. The Superintendent of Health should ever keep an eye on these church grave yards that may contaminate our water sheds, at least, until there is additional legislation providing for the above referred to cemeteries. We have already a good law for protecting water sheds, provided it required a regular and careful examination of the water, so as to detect impurities, and keep our people well, instead of waiting until sickness has developed, and then look up the cause.

I am inclined to think if the people only knew the law, there would be a general disposition to assist the Superintendent of Health in keeping their water sheds free from contamination, but in the meantime, all legislation on the subject should be enforced regardless of person.

An Act, to Change the Time of Meeting of the State Examining Board.

The time for the convening of the State Medical Examining Board, should be altered to one week previous to the assembling of the State Medical Association.

The present law prescribes that the Examining Board meet at the same time and place, as this body.

As the law now stands, it is objectionable.

If we had an amendment requiring that the State Board of Medical Examiners convene at the same place, and one week prior, to the State Medical

Association, it would give the Examiners an opportunity to accomplish their work, and also join in the exercises of our Association, a pleasure to them, and a decided benefit to this organization.

If the successful candidates were given their license on the morning of the assembling of the Association, an opportunity would be given them, of becoming members; as it is, many of them do not know their fate until this Society has adjourned and they have returned to their several homes throughout the State, probably, never manifesting any further concern in this State organization, and in the majority of instances, get into ruts, and lose interest in medicine.

Out of the 1500 legal physicians, only 465 are members of this body. The chief cause for this small per centage of membership is due to the date of these examinations. Change the time of holding the same, and we will have a larger membership, giving more weight and strength to the North Carolina State Medical Association; at the same time, the old commonwealth, a better, more up to date medical service.

Enforcement of the Law Regulating the Practice of Medicine.

We have a good law regulating the practice of medicine in this State, and the applicant who receives license to practice, from our Board of Examiners, can justly feel complimented, but after four or five years of close study, spending all the money in his possession, as well as borrowing from friends, to complete his course, returning to his native home, to find illegal practitioners of pretentious attainments and boasted skill, dishing out medicine to an unsuspecting public, unmolested by the legal authorities, is discouraging, and unfair to the new licentiate.

Let each county form a medical society, and appoint a board of censors to look up each one of these illegal, irregular fellows, and place their names, with sufficient proof to convict, in the hands of the Grand Jury.

It would be well in this connection to look after some of the druggists, who have a decided inclination to prescribe, and treat special cases. A few indictments and convictions will rid this State in a short time, of illegal practitioners, and put a stop to the druggist, so far forgetting himself as to diagnose and prescribe.

Repeal of Certain Laws

The Legislature that met at Raleigh this year, enacted a special tax of ten dollars on each physician of the state. It is the opinion of a large number of physicians with whom I have conversed on the matter, that the next Legislature should be asked to repeal this State law, and also provide legislation necessary to prevent or remove special municipal tax on physicians.

There are 1500 registered physicians in this State, and it means $15,000 taken out of our pockets; enough to establish our Vaccine and Diphtheria Anti-Toxine farm.

Some legislation should be enacted to exclude many of the patent medicines, that are now offered by druggist's and cross road merchants. Many of them contain narcotics, and not infrepuently cause the opium habit, and occasional death in children. I would suggest that our next committee on legislation have their eye on this point, also the examination of the various foods that are offered for infants.

In conclusion I wish to say, we must have a determined, concerted action of this body, our bills and amendments for all needed legislation framed, and pledges of support from the various candidates for the 1897 Assembly, if we expect to succeed.

The committee on legislation should have their bills outlined, praying an appropriation for the various needs, so that the county societies could ask their individual representatives to support the same, before leaving home for the State Capitol.

If the family physician talks the matter over with the new legislature, the probabilities are, that the bill will go through, and we will get all that we ask for, and we will ask for nothing but what is reasonable and right, and for the protection and good of our people.

DISCUSSION.

Dr. Hines said that the legislation that the Legislature had done, for the Society, had been as much harm to it as good. He did not believe that any man in the hall would see the matters advocated by Dr. Burroughs carried through. The less often the Society comes before the Legislature the better for it, and for the medical men, and for the people of North Carolina. The people would have to educate faster than they have ever been, for them to understand the regulations as doctors do. He said he would like to know how to prevent tuberculosis; he had not found out himself. He thought that he was one of the first men to come to the conclusion of the truth, that consumption was contagious and infectious. He had positive proof of it in the year 1858, submitted to him by William R. Poole, of Wake county, whose father had died of consumption. The servants who nursed his father, died of it, the washwoman died of it, and all the children who helped nurse him. Mr. Poole lived in fear of it all his life. He understood that consumption is not always hereditary, and not always contagious.

He had seen diphtheria ever since 1855 up to the present date. He had never seen any, outside of books, that convinced him that diphtheria was a contagious disease. He had seen people living together, thickly and where it was carried into the house, they passed through the exposure without contracting the disease. Forty years ago, he saw one case, and the second year, in August he saw his second case. At the same time the patient had scarlet fever. Up to that time, he had never heard of scarlet fever and diphtheria being united in the same patient. All of that family lived in the

same room and not another member had diphtheria. They did have scarlet fever. The first case had diphtheria in the room with other children. The child died in the arms of its mother and all the children were round it at the time, and not one of them had it. He gave one case which proved it. The lady had diphtheria, and one daughter would never pass without kissing her and the other daughter would not kiss her. The one who kissed her did not have diphtheria.

Dr. Burroughs replied to Dr. Hines question in regards to its contagiousness of tuberculosis, that the instance he had recited proved the contagiousness, and strongly suggested isolation and disinfection as a preventive measure, The paper was referred to the Committee on Publication.

REPORT OF THE CHAIRMAN ON THE SECTION OF THE PRACTICE OF MEDICINE.

By Thomas M. Riddick, M.D., Woodville, N. C.

In lieu of the customary review of the whole field of Practice, I have prepared a paper on

PNEUMONITIS IN CHILDHOOD.

My friends, Drs. Marshall, Arthur, Grimes and Fitch have kindly prepared papers too, under my Section, which they will present.

In the selection of subjects I have endeavored to choose those that will prove of most interest to the practical physician when they are discussed.

Now, pneumonitis is a self-limited infectious disease, producing temporary pulmonary lesions that are peculiar to it. It is non-contagious.

There are two types of this malady which present themselves for our consideration: First, croupous or labor pneumonitis, where the pulmonary invasion is immediate, and the lung structure itself the original site of inflammatory activity; and second, broncho or lobular pneumonitis, where the lung involvement is a sequence of a preëxisting bronchitis, or rather a downward extension of the bronchial inflammation into the pulmonary tissue.

Each form of the disease has its distinguishing characteristics. For instance, broncho-pneumonia is often found as a complication in whooping-cough, measles, scarlatina, typhoid fever and diphtheritic croup, and we must not overlook hypostatic congestion and atelectasis in reviewing the factors in its causation. Children under the age of three years or thereabouts, it appears, are more given to this form of pneumonia, while the lobar or croupus type of this affection is more frequently found in those children who have passed the earlier years of infantile life and are approaching the stage of adolescence.

For many years the opinion obtained that pneumonitis was essentially an inflammatory affection, and exposure to dampness and cold were regarded as the chief agents in its generation. The frequent coexistence of a severe cough and cold at the time of an attack, seemed to support that view of its etiology. The fact, however, that it prevails as much in mild climates as in those of lower temperature, and the further fact that it often assails those who have not been in anywise subjected to exposure, antagonizes somewhat the former theory that prevailed as to its origin. We may class vicissitude of temperature, then, as being a predisposing condition, rather than a primary agent in setting up the disease.

Bad sanitary surroundings in this, as in other diseases, are potent auxiliaries in its spread and propagation, and many violent endemic attacks of it have been traced directly to the close proximity of cesspools to the habitation of the sick and to the atmospheric contamination resulting from bad plumbing. Over-crowding, poor ventilation and uncleanliness assist greatly in its production.

In short, it is now held that pneumonitis is a zymotic disease, and that wherever the specific pneumonic germ finds a favorable and fostering nidus there it propagates.

The lancet-shaped coccus of Frankel is claimed by many pathologists to be the source of trouble in pneumonitis, though Professor Prudden, a high authority, holds that Frankel's pneumococcus is not the only microbe which can generate pneumonia, but that pulmonary inflammation may result from the action of other microbes, especially where the pneumonia occurs as a complication of infectious diseases.

It must be admitted that the development of traumatic pneumonia, from forceful injury to the lung tissue, impairs somewhat the force of the theory which regards this disease as being of purely microbic origin.

In children the pathological anatomy of pneumonia is not radically different from what we find in grown-up people. The different stages of congestion, hepatization and softening or liquefaction are found, as in adults. Suppuration and gangrene are not frequently found among children, save in those grave cases where embolic plugging occurs. All three of the above-mentioned stages may exist at once, death resulting from the rapid extension of one condition into another more fatal.

The right pulmonary apex is generally first involved, then the left apex. Next in order is the left base, followed by the right base. Sometimes the inflammation is so widespread as to involve all of the pulmonary lobes in rapid succession, and often it passes over to the opposite lung, giving us a bilateral form of the disease.

In the first stage of hyperæmia the arterioles are greatly distended by the undue afflux of blood to the part. This is soon followed by the stage of red hepatization. Here the lung tissue is to a great extent solidified and resist-

ant upon palpation. The tissue yields and breaks down when subjected to much pressure. Its color is a deep red, and on section presents a granular appearance. The bronchial tubes adjacent to the inflamed lobule contain fibrin, muco-pus and epithelium. Fibrin is also found on the pleura, which covers the affected lobe. The air vesicles contain epithelial cells, pus cells, fibrin and red blood globules.

When the stage of red hepatization is at its maximum of development the products of inflammation completely fill the air cells.

The stage of gray hepatization follows that of red hepatization, the lung structure showing a grayish mottled appearance. Here the cell contents take on granular degeneration, then soften and liquefy and are removed by absorption, when resolution sets in. Expectoration, too, is an active means in ridding the system of this pathological product.

In lieu of resolution a cheesy condition may supervene. In that case the pulmonary exudation assumes a condition of firmness and appears whitish and cheese-like. In some cases a necrosis of the lung tissue occurs, due to arrested circulation in the parts.

In childhood the inauguration of croupous pneumonia is somewhat different from that in the adult. In the latter a decided chill usually ushers in the attack, while in children a mere sensation of chilliness, sometimes followed by convulsions, is the initial announcement of the disease. Catarrhal pneumonia, being a consecutive affection, is more gradual in its approaches, and many of its prodromal features are those of the bronchial trouble, of which it is a sequence.

When we find the little sufferer with elevated temperature, restless, refusing to take nourishment, thirsty, face flushed, pulse much accelerated, respiration quickened, with marked enfeeblement and the facial expression anxious and indicative of suffering, we may reasonably suspect that pneumonitis has claimed it for a victim. In the acute forms of both croupous and well developed catarrhal pneumonia these symptoms are present, though in the latter type they are somewhat mitigated.

In some authorities we find the expiratory moan placed as a pathognomonic sign, but my own observation is that this rule has exceptions. When it is present it doubtless occurs from the pain experienced in the inflamed part, during the acts of respiration, though pronounced gastric distress would give a kindred symptom.

In the incipient stage we observe that the cough is dry and hacking in character and a source of much irritation to the little patient, though as the disease advances with favorable tendencies it becomes looser and much less painful, the detachment of the sputum becoming easier.

The misty hue of the expectorated matter, which is a cardinal diagnostic proof in adult pneumonia, is wanting in childhood. In fact, in very young

children comparatively little of the sputum is expectorated, the patient, in most instances, swallowing it involuntarily.

The headache, which is a frequent feature, especially if it be conjoined with convulsions and decided hebetude of the senses in the earlier stages, is likely to awaken grave suspicions of an affection of the central nervous system, and pneumonia has often been mistaken for meningitis by too hasty diagnosticians. Nausea and vomiting, together with muscular twitchings, appear confirmatory of such an opinion, but the later manifestations show plainly that the thorax, rather than the brain, is the pathological seat. After the full development of labor pneumonia, the proofs elicited by ausculation and percussion leave no further reasons for doubt or obscurity as to the character of the malady in question.

In the catarrhal form of pneumonia we are more prone to error in diagnosis than in the lobar or croupous type, for the physical signs are much harder to bring out, due to their lessened intensity. Frequently bronchitis is diagnosed where a catarrhal pneumonia really exists. But as the conditions to be combatted demand remedial measures that are corrective of both bronchial and pulmonary inflammation, it does not matter greatly if such a pardonable diagnostic sin be committed.

The hasty respiration, sometimes reaching 30, 40 and even 50 respiratory movements in a minute, is a valuable sign-board here, and assists no little in the differential diagnosis. Dyspnœa is often marked.

The temperature range is variable, depending much upon the severity of the attack. In the milder cases it runs from 101° to 103°, while in the more severe ones it often runs from 105° to 106°. As much as 107° has been recorded.

In the major portion of cases 104° may be said to represent the average, when the fastigium is reached. In robust children, where a sthenic form of inflammation exists, this gives rise to great flushing of the face, while in others, of a more asthenic and anæmic type, we see pallor of the countenance and a somewhat depressed temperature.

A moist but furred tongue is the rule. The thirst is pronounced. For the most part the bowels are constipated and the secretions checked. The urine is more concentrated and takes on a deeper red color, and in some patients urates are found after it has cooled.

While the inflammatory processes are most active the chlorides are much reduced in quantity or are wholly diminished.

As the symptoms abate there is an evident improvement visible in the manner and general appearance of the patient. Soon the playthings are called for and the childish desires and wants of the healthy state reappear.

The convalescence, in favorable cases, is gradual and steady, if there be no relapse, though a cough often remains for a while as a lingering memento of the attack.

The prognosis, of course, is measured by the form and intensity of the disease and the presence or absence of complications. It would be needless to advert to the fact that a bilateral seizure of pneumonia is less favorable, as to outcome, than a unilateral one, and that secondary attacks, which are the sequelæ of measles, whooping-cough and other debilitating affections are more to be dreaded than primary attacks. We may put it down as a fact that any preëxisting or accompanying condition that increases the asthenic state of the patient must always be regarded with alarm, for death occurs from exhaustion in a large proportion of cases. The younger the child the greater the danger, for the patient, by reason of its tender years, is lacking in that reserve energy, which might pull an older and stronger child through a crisis.

We will now consider the treatment or rational therapeutics indicated in both the croupous and catarrhal forms of pneumonitis.

In the lobular form of pneumonia we remember that we must not only control the antecedent bronchitis by counter-irritation, over the tract of inflammation, and by expectorant agents that control the inflamed state of the bronchial mucous-membrane and favor the detachment and expulsion of mucus from the air-passages, but we must also fight the additional debility of the patient, which has been superinduced by the further extension of the original trouble into the lung substance. We must ever be watchful of the fatal effects of a prolonged asthenic, and remedies that brace and tone the heart and exercise a general tonic and supportive influence upon the whole system are indicated.

As a counter-irritant, cantharidal collodion is my choice, applied judiciously over the area of inflammation. As an expectorant and stimulating agent to the inflamed bronchial membrane, I prefer the combination of ipecac and ammonium chloride, regulating, of course, the quantity in all cases to the age of my patient. To support the heart, I give digitalis, and quinine to lessen inflammatory processes. If the cough be of the irritable type, I add tinct. opii. camph. to my expectorant mixture prorenata.

The secretions must be kept active and the bowels open, and to secure this end nothing, in my opinion, is better than calomel, followed by a saline purge. Nutrients and stimulants, in some cases badly administered, are absolute essentials, if we do not want a fatal termination from exhaustion.

Any collateral troubles that may arise must, of course, be met by such appropriate measures as will suggest themselves to every practical physician. If the pyrexia exceed 102°, I give phenacetin as long as needful, but no longer, for all cardiac depressants should be avoided, as far as possible, les the last straw might break the camel's back.

In croupous pneumonia, where the onslaught of the disease is sudden, our measures must, perhaps, be a little intensified and heroic, for we have an active, rather than a passive, form of congestion to combat. Many of the

remedial measures above-named find a good field for therapeutic application here; but our work is somewhat shorter and must be sharper. The fires of an active inflammation blaze, so to speak, and we must take antiphlogistic weapons from our medical armamentarium if we would come off victorious in the fray.

In the earlier stages the cardiac sedatives exhibited conservatively, find their place. Aconite and veratrum viride are the best of these.

In the second stage strychnine and digitalis should be given to support the weakened and flagging heart, so that it may pump the blood up through a solidified area. Quinine, to abate inflammatory energy; ammonium, salts and ipecac, to favor expectoration; good counter-irritation, not pushed to that point, however, where the patient would cry for mercy, as my facetious friend, Dr. Oscar McMullan, might suggest, but rationally employed; active stimulation with milk toddy and egg-nogg; calomel, to relieve the disordered secretions, and iron and arsenic, if there be any coexistence of malaria, are the therapeutic measures demanded. An equable and uniform temperature in the sick chamber is a *sine qua non.*

DISCUSSION.

Dr. Hill remarked, as he had the day before, that the treatment for pneumonia is whiskey. As an authority he gave Dr. Flint, who cited one case in which he used half an ounce of pure French brandy every half hour for six hours and the patient recovered. He had seen time and again cases of pneumonia in children where they were given a good dose of whiskey, and the crying and screaming would stop and they would go to sleep. As for quinine, he had never seen in his whole practice where it did one particle of good and he had seen it do harm time and again. If the pneumonia patient is given quinine he is gotten into a fretful, nervous condition, that quinine always produces. He was surprised that in the mention of heart stimulants for cases of pneumonia no mention had been made of nitro-glycerine. He had seen cases where the patient was almost moribund and was given nitro-glycerine and it brought the child out. Then the antidote, whiskey, should be given. He should continue to use whiskey till he found something better.

Dr. McMullan raised his voice against the use of antipyrine in pneumonia. He did not believe that fever at all times was something to be combatted, but was rather inclined to think it is a conservative process by which poison is eliminated from the system. He did not believe it ought to be interfered with materially, certainly not by depressing the heat centres by the cold tar series—possibly by skin elimination, unless the fever becomes abnormally high. In a case of pneumonia he is always glad to have a temperature of 103°, and he was glad to see the patient in pain, for then he knows the patient has strength enough to throw it off. He was not an advocate for

cantharides, for he is of the opinion that they are too irritable. He asked that the Society should sprinkle a few grains of salt over what Dr. Riddick had said about cantharides.

Dr. Frank Duffy reported a case of a child three years old whom he had left very sick with pneumonia. The patient had whooping-cough, but long enough to be well, but was still having paroxysms of violent coughing, and is suffering with bronchial pneumonia in both lungs. On the last Sunday the temperature having risen very high and it appearing that the patient was about to die, he was summoned and found the child cold, his arms blue, respiration very rapid and occasionally having those paroxysms of coughing. It looked like dissolution was imminent. He gave the child peroxide of hydrogen, a half teaspoonful, which was given frequently, sometimes not more than ten or fifteen minutes apart. At one time the mother laid the child down and went away, supposing it to be about expiring, but whether from the remedy or not, the color began to return, and he now thought the child in a fair way of recovery. He had used that remedy some, but that was the most marked instance of its use. There are some objections to its use and some good reasons for not expecting very much from it, but he was very much impressed with that case, and had spoken to some medical brothers about it, among whom is Dr. Hyatt, who thinks it a very good remedy. There is a great deal to be said in connection with the treatment of pneumonia. No doubt doctors have done a great deal of harm as well as good. The first hospital he was at in Baltimore Dr. George Farnandis, one of the visiting physicians, said if a patient had pneumonia he would give a half grain of tartar emetic every two hours. A lady 80 years of age had pneumonia at that time and was treated with that medicine and recovered. Though he knew all that has been said against it, still he had some lingering respect for the remedy, growing out of his observation of it, although he had himself used it very little. He stimulated very freely with alcohol.

Dr. Haigh did not think the statement ought to go unchallenged that quinine is of no service in pneumonia. Often physicians see published a case where certain remedies have been used with certain results, and think they ought to use the remedy themselves, and do use it and find it to be of very little service. He himself had often been very much disappointed in that way, but he thinks that the reason was a mistake on his part, probably because he did not know the mode of using the remedy and did not use it properly. Dr. Otis claimed that pneumonia could be aborted by the use of quinine, and he gave as high as thirty or forty grains at the commencement of the disease and claimed that he aborted the disease frequently. He himself was perfectly satisfied that quinine is of much service in pneumonia and did not think it ought to be thrown aside without some remarks in its favor. He had seen the effects of this disease cut short from a few doses of quinine.

Dr. Sykes agreed with Dr. Haigh about the use of quinine. In the treat-

ment of pneumonia in adults and in women and also in children who have reached 12 years, he did not want a better remedy than quinine and spirits of turpentine. He had never lost a case under 60 years of age from pneumonia, except one girl about 18 years oid, who had had some lung trouble ever since childhood. He had treated quite a number of children and did not want anything better than deodorized tincture of opium and spirits of nitre and syrup of ipecac. He would not be willing to have quinine set aside; he had used it in the treatment of children with signal success.

Dr. Faison wished to bring out one ponit in the treatment of Dr. Riddick, and that was the diagnosis. When there is bronchitis and the temperature goes from 99 to 100 up to 102½ and 103, he generally made the case pneumonia without listening to protest. He took for granted that children's cases were those Dr. Riddick had reported particularly. In treating children he had not relied upon such medicine; but when he would see children with the livid hue about the face and hard breathing, he had never seen anything act so admirably as a hot bath with plenty of bi-carbonate of sodium; the child would rest easily after this. He had absolutely discarded quinine in those cases. He used the aromatic spirits of ammonia with chloroform to allay the pain. He used quinine and Dr. Hill's antidote, whiskey. The point he wished to bring out was that the temperature is important in the diagnosis of pneumonia in children.

REPORT OF SURGICAL CASES.

By Francis Duffy, M.D., Newbern, N. C.

INFLAMMATION OF KNEE-JOINT OF TRAUMATIC ORIGIN—SUBSEQUENT DEVELOPMENT OF MALIGNANT TUMOR, WHICH WAS MISTAKEN FOR ANEURISM OF THE POPLITEAL ARTERY.

Patient, man, æt 21 years, applied for treatment December 7th, 1892. The knee-joint was very much enlarged, tense and hot pain was almost constant, and, judging from complaints of patient, sometimes very severe.

Patient was a sailor; more than a year before he had fallen on the deck of a vessel and injured his knee-joint; some time after that he was accidentally struck on the knee with a hammer, and lately sustained a third injury by falling on the injured part. Inflammation of the knee-joint was easy to discover, but there were complications which were not easy to determine. The condyles were expanded and the popliteal space bulging. Puncture of the joint at the inner side with an aspiratory needle brought away a small quantity of bloody serum.

I padded the limb with cotton and put it up in a plaster-Paris dressing, so as to keep the parts immovable and subject to equal pressure. Patient was kept under general treatment, such as opiates, to relieve pain, iodide of iron, cod-liver oil; but there was no improvement. After about a week the cast was too tight and was removed. Careful examination of the popliteal region discovered pulsation, not only over the artery, but a little to each side. The fingers of each hand being pressed on opposite sides of the artery and separated two inches apart, would each detect synchronous pulsation. When the ear was applied a loud aneurismal (?) bruit was heard. Aneurism was supposed to be present.

The patient was examined by Drs. F. W. Hughes, Charles Duffy and Leinster Duffy and the diagnosis confirmed. The condition of the limb was such as to require amputation, which was done at about the junction of the middle and lower third.

Recovery was tedious, but by March 15th, 1893, the stump was healed and patient robust in appearance.

Examination of the amputated joint revealed the fact that the popliteal artery was intact and no aneurism present. A tumor of malignant appearance originated on the posterior aspect of the internal condyle, which was rough and eroded, and from which surface projected grayish fungus-looking masses. It may be questioned whether this tumor pulsated or whether the impulse of the artery was transmitted through the surrounding tissues. Of course pressure would account for the murmur. The patient went away and

I lost sight of him, but I think it likely that the trouble has recurred in the stump or some other part.

Twice before, in the last fifteen years have I reported to this Society cases of tumors which at first were thought to be aneurismal, and in both of these cases amputations were performed—one in arm, the other in the thigh. In both of these the patients died after entirely recovering from the amputation.

HYPERTROPHIC NASAL CATARRH TREATED BY ELECTROLYSIS.

A gentleman æt 34 years, a robust subject, applied to me January 12th, 1893, suffering with nasal catarrh. The pharynx was subacutely inflamed. The discharge was not profuse and but little offensive. One nostril was occluded to natural respiration—a little air could be forced through. The other was less obstructed—the voice was decidedly "nasal."

The patient was treated with douches and internal medication. Solutions of boracic and carbolic acids, listerine, glycerin, albolene, etc., were freely tried with different forms of douche aparatus, nasal irrigations and sprays, with slight temporary benefit. The internal administration of iodide of potassium was also of some benefit.

Not obtaining much benefit, I resorted to strong carbolic acid. After benumbing the mucous-membrane with cocaine, I would wrap a piece of absorbent cotton around the end of a probe, and, after dipping that in liquid carbolic acid, pass it in the nostril and apply it freely and as thoroughly as practicable to the diseased tissue. This was done twice a week for a few weeks. The nose, which would bleed any ttme when forcibly blown, would always bleed a little after those operations. Douches were kept up between times. These powders were used with Bosworth's powder-blower, iodoform, iatral, iodol, etc. Still there was no marked relief. After four or five months of such treatment the patient went (he informed me) to Philadelphia, and was under the treatment of a specialist several weeks. His throat was benefited, but he returned to me with the nose about in the same condition as before. The nasal mucous membrane was very much thickened, soft and bleeding at slight touch along the turbinated bones, but tough on the floor of the anterior nares, the passage being very much encroached on and the orifice narrowed.

I then decided to try electrolysis, which was begun in August, 1893. The battery used was Waite & Bartlett's liquid 24-cell galvanic, which, however is much more powerful than is necessary for that purpose. With clean elements and fresh fluid, six cells will give as much force as is necessary, viz: from 5 to 10 milliamperes. But only by attaching the milliampere meter can you correctly estimate the force of the current. Two forms of electrodes were used—one, a slightly bent staff, with a round point about 20 milliamperes in diameter; the other, a straight shaft, with a thin, flat blade, about 2 inches long and ½ inch in diameter.

Pledgets of cotton were soaked in strong solution of cocaine and were pushed within the nose and allowed to remain until the organ was benumbed, then the sound electrode was inserted and pressed gently and gradually along the floor of the nares. After a few minutes the obstruction would give way and the electrode would pass through; it was then drawn back in the same gradual manner. The electrode was then changed, taking the thin, flat one and gently passing it in the narrow parts of the passage between the septum and the turbinated bones. The current was applied about fifteen minutes, and, notwithstanding the cocaine, caused considerable irritation, disposing the patient to sneeze, especially when stronger than 5 or 6 milliamperes. The negative pole was, of course, used in the nose, the positive either held in the hand or placed on the cheek, but it was interesting to note the difference in the meter when the pole was changed from the hand to the cheek, the less resistance in the short circuit giving, of course, a stronger current. There was, at first, always some hemorrhage after these operations, and if the current was too strong, there was increased local irritation for several days. The current was applied twice a week and some weeks were skipped. About twenty applications in all were made, and while he cannot be said to be cured, he is in a very much improved condition and regards the electricity as the only thing which was of real benefit to him. At first only the worst side was operated on, which soon became the best side, the patient breathing through it with comfort and the tones of his voice much improved. Then the other side was operated on with like result.

The patient has not been under my observation for several months and has moved away to a distant State. This is the only case of the kind on which I have had any opportunity to try the treatment.

DIFFICULT CASE OF ERROR OF REFRACTION OF THE EYE.

Ignatius W. Brock, æt 24 years, consulted me May 31st, 1892, on account of trouble with his eyes. Being an artist, his eyes had been very much taxed by painting, drawing and the like, for a number of years. Examination revealed astigmatism.

Vision R. E., 20–30 +. L. E. 20–20.

The different lenses which his eye would accept and the different axes at which cylindrical lenses were accepted at different trials soon made it evident that a correct result could scarcely be obtained without the use of atropine. He was so informed, but rather than have his work interfered with so long by dilated pupils, he preferred to have me do the best that I could by repeated trials without midriatics. The record shows that on the 31st of May, with

R. E. cyl. — 36, axis 180°, vision was 20–20.

L. E. cyl. + 72, axis 90° ⊃ cyl. — 50, axis 180°, vision 20–20.

June 7th, R. E. cyl. — 36, axis 10° ⌒ cyl. + 60, axis 100°, vision 20–20.
" L. E. cyl. — 50, axis 170° ⌒ cyl. — 72, axis 80°, vision 20–20.
June 21st, R. E. cyl. — 36, axis 180°, vision 20–20.
" L. E. cyl. — 36, axis 160°, vision 20–20.
July 18th, R. E. cyl. — 38, axis 10°, vision 20–20.
" L. E. cyl. — 40, axis 165°, vision 20–20.

Other trials seeming to point to this last formula, I wrote it for him and had it filled; but it did not prove satisfactory; the eyes were not at ease and tired on use.

In November or December, 1892, Mr. Brock being in New York, consulted Dr. Knapp at his office, as he informs me, who put homatopine in his eyes at the first visit, repeating in half hour, and under that influence examined the eyes, not using it again. Two days afterward, he says, the Doctor made auother examination, and again in about one week. He gave him spectacles approximating this:

℞.—Both eyes, cyl. + 0.75, D., axis 90°.

These proved unsatisfactory, and vision (at this writing) with these glasses is as follows:

R. E. 20–30. L. E. 20–30 +.

When reading or drawing, while wearing the spectacles, the eyes would become painful and patient thought he was as well without them, and so discontinued their use.

In January, 1894, Mr. Brock states he was in Baltimore and consulted Dr. J. J. Chisholm, who first tested his eyes without atropine and then applied homatropine once and tested two hours afterward, then tested again next day and prescribed this formula, which patient showed me:

R. E. cyl. — 1.25, axis 15°.
L. E. cyl. — 1., axis 165°.

With these patient sees nearly 20–20, but the letters are a little blurred and dial not uniform. He wore them nearly three months, but his eyes, after a short time were uneasy and sometimes headache followed their use.

Mr. Brock then consulted me again, and on hearing him carefully, I came to the conclusion that the accommodation of the eyes had now been relaxed, and consequently a correct formula had not been obtained.

April 26th I made four applications of a 4-grain to ℥ i. solution of atropia sulph. at intervals of from one to three hours.

On the 27th three applications were made and patient was very much affected in a general way—dryness, dizziness, difficulty in urinating, etc.

On the 28th I applied a strong solution of cocaine to the eyes and the pupils became distinctly wider, notwithstanding the fact that the patient was

nearly poisoned by frequent instillation of atropine in the eyes, taking care at the same time to keep it out of the tear passages.

Patient now read $\frac{20}{100}$ with each eye, and with glasses as follows. No improvement with spherical glasses. With cylindrics:

R. E. + 24, axis 90°, ⌒ — 72, axis 180°, vision 20–20.
Left eye + 30, axis 90°, ⌒ — 30, axis 180°, 20–20.

On May 8th no atropine having been used since April 27th, eyes accepted as follows:

R. E. cyl. + 40, axis 90°, ⌒ cyl. — 72, axis 180°, vision 20–20.
L. E. cyl. + 36, axis 90°, ⌒ cyl. — 60, axis 180°, 20–20.

The eyes had been rested since the use of the atropine. It is interesting to note the changes which the eyes underwent until the 11th, as the eyes by use lost more and more the effects of the recent rest from atropine, and even after the pupil was reduced to its normal state.

10th.—R. E. cyl. + 50, axis 90°, ⌒ — 36, axis 180°.
L. E. " + 50, axis 80°, ⌒ — 50, axis 170°

This last formula was at last repeatedly accepted, and, as will be seen, is a compromise between the demands of the eyes with and without atropine.

O. D. spher. — 1.12 ⌒ cyl. + 2. axis 100°.
O. S. spher. — 0.75 ⌒ cyl. + 1.50 axis 85°.

The patient is using this formula with good results.

It will be observed that some of these formula are written in inch and some in dioptric scale.

The above case is reported, not to discredit the work of the eminent specialists referred to, but to show the inadequacy of incomplete relaxation of accommodation and hurried examinations in such cases.

REPORT OF SURGICAL CASES.

By David T. Tayloe, M.D., Washington, N. C.

INTERSTITIAL FIBROID—WEIGHT SIXTEEN POUNDS—SUPRA-VAGINAL HYSTERECTOMY—RECOVERY.

Mrs. H., aged 39 years, consulted me after having sought relief in many quarters in vain. The tumor was quite large and was first noticed ten years before. She was wasted about the chest and arms, like a case of old ovarian disease. The abdomen measured forty-two inches at the umbilicus. The tumor was firm and solid throughout, and as the result of spinal curvature in the lumbar portion, the growth was well pushed up under the sternum and ribs; no trace of the ovaries could be detected. For several years she suffered great inconvenience from œdema of lower extremities and embarrassed respiration as the result of pressure. Menstruation was always in excess, and for the last fifteen months was so profuse as to threaten life at times. Her life prospects were anything but bright. I operated on her in a private house under antiseptic precautions as nearly as I possibly could under the circumstances. Ether was given. The first incision measured eight inches. On the right side the broad ligament rose high up on the tumor; the left broad ligament was largely spread over the half of the tumor as high up as the ribs. The opening was then enlarged four inches, and by hard pushing and patience the tumor was moved forward as far as its connection on the left side would permit. The ovaries were so embedded in the tumor they could never have been removed. The right broad ligament was transfixed by silk sutures, secured and divided. All bleeding from the tumor was prevented by strong locking forceps. The fibroid was now more easily dealt with. It was drawn forward and the left broad ligament treated in the same way. I now applied a strong wire ecraseur around the cervix, low down, and

*Read before the North Carolina Medical Society, May 15, 1895.

the whole mass was cut away, the stump showing a section of the cervix in the center. Owing to many adhesions there was much trouble in finding some bleeding points among the loose cellular tissue of the huge gap now left. Secondary hemorrhage into this loose tissue was not one of the smallest risks of the operation. All the parts were now wiped dry with hot carbolized sponges and the wound closed with silk sutures down to the stump in the lower angle of the wound. The first day was passed fairly well, pain relieved by injections of morphia. Temperature was never above 101° and pulse never above 120. Each day I would tighten up on the wire until the thirteenth day, when it cut through, leaving a healthy wound, which healed beautifully by granulation. The pulse and temperature were now normal.

Eight weeks after the operation she left for home. She is now a strong woman in perfect health and can do anything. For valuable assistance I wish to thank some of the local physicians of my town.

REMOVAL OF UTERINE APPENDAGES FOR DISEASE.

Miss T., aged 29; for the past eight years gives a history of suffering constant distress in the pelvis and the back.

Examination.—Appendages enlarged, sensitive and low down in Douglas' cul-de-sac; she said her sufferings were indescribable; that her pain continued all the while, but her agonizing distress commenced some days before menstruation and continued during the period. She is extremely nervous and irritable, with a feeble pulse and in an exceedingly low state of health. Her suffering was so great during the period, I administered injections of morphia, and, after several days of suffering, she looked as if she had been through a long spell of sickness—pale, feeble and care-worn. Knowing she had been treated regularly by good physicians without any improvement, and nothing gave relief; it was evident there was but one way to help her; so, after proper preparation and thorough antiseptic precautions, I removed the uterine appendages. There were considerable adhesions and great difficulty in removing the structures. The patient did well, and at the end of five days was apparently relieved; had no more suffering, and now says her health is excellent; has gained her flesh and is able to work.

Mrs. K., aged 40 years; has suffered many years; in bed great portion of the time. The patient was weak, emaciated and anæmic; she complains of constant pain in the pelvis and bearing down. For the last three years has had at intervals severe uterine hemorrhages and says that during the last eight months she has had a constant flow with hardly a day's intermission. The patient was extremely nervous and hysterical. Laparotomy was performed. The appendages were removed. The ovaries were cystic and the tubes in a high state of inflammation.

The patient made an excellent recovery without a bad symptom. She says she has not been as well in fifteen years.

Mrs. S., aged 42 years; has suffered at intervals for the past seven years with intense pain over the region of left ovary and in the back. For the past ten months the pain has greatly increased at the menstrual period, radiating down into the left hip. She was no longer capable of attending to her duties and was becoming a confirmed invalid. In this case it seemed manifest that the only way to relieve the patient from continued suffering and chronic invalidism was to remove the hopelessly diseased structure. Laparotomy was performed. I removed the left ovary and tube. The right ovary seemed all right and in good condition, and I was glad to feel justified in leaving it.

The patient recovered without a bad symptom. Temperature was never above normal. Her general health is now very much better in every way, though I must say, in the third week after the operation, the pain returned in the left side, though not severe. I believe now, by the use of massage and time, she will entirely recover, as the operation has only been performed a short time, and at the time of operating there were many adhesions; ovary was atrophied and tube chronically inflamed.

In the cases I have reported the uterine appendages were removed on account of their diseased condition. The success in these cases I attribute to (1) antiseptic technique; (2) no loss of time while operating; (3) provision against shock, as I am quite certain prolonged anesthesia and manipulation within the peritoneal cavity swell the list of mortality.

A. J., aged 19 years, presents himself with the following history: Fourteen months ago had tibia and fibula of one leg broken at lower third by a carry-log running over his leg. A physician set the broken limb in plaster of Paris. The pain was intense that night, and the patient became restless. The next morning he noticed the plaster had cracked and become broken in places. No doubt at that time the bones were separated and became misplaced, not having any support. A neighbor was called who adjusted splints the best he could. Since that time the boy has never been able to put that foot to the ground or even to stand or walk upon it. Upon examination, I find a shortening of that leg two inches; the limb terribly deformed; both tibia and fibula overriding each other; he was totally unable to use it. I decided to operate and save the leg if possible. I cut down over the seat of fracture; found I could not break the bone over, as union was so complete. I sawed the bones in an oblique manner half an inch off each end of tibia and fibula. I then divided the tendo Archilles to overcome muscular contraction; then, finding I could adjust the bones in position, I drilled three holes through the tibia on either side and through the fibula. I then used stout catgut to suture them together, put the leg in proper position, sutured the external wound with silk and dressed with iodoform gauze. I then applied plaster of Paris from knee to toe. The boy rallied promptly from the anesthetic, which lasted two hours. I gave iron as a tonic. His appetite was good throughout the entire time of his confinement, which was three months. His temperature and pulse scarcely went above normal, and as the resul of operation the deformity is entirely overcome—shortening one and one-half inches, which is made up by a thick sole on his shoe. He is now able to walk and go where he pleases. This eight months after the operation.

SOME PRACTICAL HINTS DRAWN FROM AN OBSERVATION OF FIFTY YEARS CONCERNING THE MANAGEMENT AND TREATMENT OF PULMONARY PHTHISIS.

By A. B. Pierce, M.D., Weldon, N. C.

For all practical purposes I divide pulmonary phthisis into tubercular and catarrhal consumption. And I remark that both may, under certain circumstances, be tubercular and catarrhal, and catarrhal may exist alone without the tubercular, but both more or less partake of the same symptoms before a fatal termination is reached.

As to whether the tubercular diathesis is dependent upon a specific germ, I shall not discuss, but give it as my opinion, from all the lights before me, that it is. It does not follow, however, that the other form, catarrhal, is dependent upon the same cause. That the catarrhal may exist without being dependent upon a specific germ, is equally clear to my mind for the following reasons: Previous to the changed condition of the colored race there was not one case in several thousand where consumption was ever developed in that race of people. So prevalent was this sentiment among the profession, that an eminent physician of Halifax county, in the forties, gave it as his opinion in court that he never knew a negro to die with consumption. Though this may have been an extreme opinion, yet, by almost universal consent, the profession was a unit on that subject, that it was the rarest occurrence for a negro to die with consumption of the lungs. But this, you may say, proves nothing, as the germs may have been there, but the circumstances were not favorable for their development. This would be begging the question, and as such the position would not be tenable.

With regard to the contagiousness of the disease, the evidence seems to favor the opinion, to a limited extent, especially the tubercular form. I am disposed to think, however, that too much stress is laid on the germ theory of the disease, and consequently inconvenience and erroneous views very often arise from the enforcing of such ideas.

The germ theory of disease is very often a cloak for ignorance and a want of observation and clinical experience.

If the germ theory be correct in all cases of consumption, it would seem natural to find out the germicide and apply the remedy, and thereby you have accomplished a great deal towards solving the problem of curing consumption. Common observation and common-sense teaches us that something else is to be done in order to ward off the attacks of this dire disease.

As I have already hinted, the negro race are peculiarly liable, since their changed condition, to what we term catarrhal consumption. I can account

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for it in no other way than their changed condition. Whereas they were well fed, well clothed and slept mostly with plenty of air to aërate the lungs, and took plenty of exercise, sleeping a good deal in the open air. They are now ill-fed, badly clothed and crowded in ill-ventilated houses to sleep, thus creating bad and insufficient nutrition and reducing the vital forces below the normal standard of health. In this way the system falls an easy prey to mal-nutrition and irregular habits.

Since this change in their condition I have seen whole families die out with this condition of system, when I could account for it in no other way. Mal-nutrition, produced from cold and hunger, I consider the cause of the whole trouble. I notice that females are more liable to this condition than males, due partly, I suppose, to that condition of system peculiar to the post-partum puerperal state.

Another reason why more females are attacked with this disease than males, is that the most of them have become perfectly thriftless and lazy, thus fostering a condition of system favorable to the development of such diseases.

It is truly alarming to witness the number who are annually dying from what we term catarrhal consumption. I can see no remedy for this state of things but a return to industrious habits and a change of diet.

The remedy for these evils next demands our attention. As to the negro population, I see no remedy so long as their condition is unchanged. The better portion of them, who are thrifty and industrious, may improve, but they are very few.

As to the treatment of pulmonary phthisis, I regard it as more preventive and palliative than anything else. At no time is the aphorism, "Throw physic to the dogs" more true and appropriate than when applied to the treatment of pulmonary phthisis. In the first place, I lay down some general rules: Studiously avoid everything that would disorder the digestion, such as cough mixtures and the like, and take nothing that would lower the vitality of the system or prevent the highest type and best grade of nutrition. Climate, it is true, has something to do with the treatment of the ailment, but in order to be effective it must be utilized in time, before the vital forces are lowered too far.

A high, dry atmosphere, combined with the inhalation of pine fumes, is doubtless conducive to the healthful state of the pulmonary vesicles. A seafaring life and horse-back exercise I regard as the most favorable conditions to promote the due performance of the functions of the lungs. But few, however, can avail themselves of these remedies, and we have to resort to other treatment in the majority of cases.

The use of the cold bath, with proper restrictions, I regard as one of the greatest preventives to the progress of the disease. I do not go as far as some in recommending ice-cloths to the chest. The shock to the heart in delicate persons is too great, and I regard it as a hazardous remedy; but

there is a way gradually to apply the cold bath to the chest and lungs which is not at all hazardous.

My plan is to wash the head and neck and whole chest daily with cold water, with the naked hand, which will enable you to apply the remedy without the shock to the system which results when it is applied in other ways. That system of exercise that expands the chest most and exposes the most breathing surface to the oxygen of the atmosphere, I regard as the most salutary and effective treatment for consumption of the lungs. Some cases of tubercular consumption of low vitality and feeble circulation may be benefited and life prolonged to an indefinite period by the moderate use of pure corn whiskey at each meal, and the only objeetion to the remedy is the danger of forming the habit of drinking and continuing the treatment too long and in too great quantities. It is not adapted, however, to all cases of tubercular consumption, and especially not to cases of catarrhal consumption. There are certain occupations and professions that should never be engaged in by patients having weak lungs or consumptive tendencies. Engage in no employment where close confinement in-doors is imperative and where fine particles of dust or cinders of any description are a part of the breathing atomosphere. Avoid all occupations that do not afford plenty of fresh air and exercise. If you are a book-keeper, you must quit the desk and seek the pure air of heaven. If you are a professor or teacher, you must quit the books and benches and revel amid nature's volumes and seats prepared in the forests and fields for God's creatures who are wearied and burdened with care.

To sum up the treatment of consumption in a few words, I would give the following directions:

1. Eat all the nutritious food that your stomach will digest.
2. Take all the out-door exercise your physical strength will admit of.
3. Breathe all the air your lung surface will admit without pain.
4. Employ your time in some agreeable occupation that will keep your mind from yourself and your disease.

Outside of a sea-faring life, I know of no employment more conducive to the health of a consumptive than the profession of a country doctor. A good horse, bridle and saddle and a pair of medical bags forms his armamentarium, and if he plies them well, he will be placed in the most favorable condition to enjoy health and a good conscience. Your humble servant is an exemplification of what he preaches. Two of my uncles and a sister died of pulmonary consumption, and until I was 35 or 40 years of age I only weighed from 125 to 130 pounds, threatened all the time with pulmonary trouble; but, adopting the treatment I recommend, I weighed, before I was 50, 170 pounds, and now I have passed my three-score years and ten, and am still practicing medicine in the country—a country doctor.

GOOD DRINKING-WATER *VS.* MALARIA—TWELVE MONTH'S EXPERIENCE WITH MALARIA ON ROANOKE RIVER.

By George H. West, M.D., Weldon, N. C.

This is a subject pregnant with interest to the general public as well as to the medical profession. It has been the generally accepted opinion of the profession for years, and I may say until 1886, that the poison of malaria was gaseous in character. Since that time a complete revolution has taken place, by the aid of the microscope, through the labor of Laveran and numerous other investigators, who have corroborated his testimony; and from these scientific investgations, it is generally conceded that "malaria is due to the introduction of plasmodium malariæ into the system," and to prove that this poison is taken into the system through the medium of drinking-water will be the object of the following remarks I shall offer for your consideration.

From the remotest antiquity swamp-waters and others of a similar character have been regarded as unwholesome and productive of febrile diseases; but since the time of Lancisï the theory of a malarial exhalation from a rich soil absorbed into the system from the air, has been accepted by the profession as explanatory of all cases which occur, and the possibility of the transmission of the poison or disease-essence by water, because forgotten. Vestiges of the old doctrine remained, however, in all malarious countries, not so much in the professional mind and literature as in the opinions of the people. The natives of malarial sections very generally continued to regard an impure water as the cause of paroxysmal fevers, and medical men from time to time suggested the possibility of the transmission of such diseases by the water supply or recorded instances where the supply was conceived to be connected with the appearance of a localized epidemic.

I shall offer only my own experience and observation during my twelve months residence as physician to the State Farms on Roanoke river. When I assumed control of the medical supervision of the convicts, May 9th, 1894, I found malarial diseases quite prevalent, in fact, almost to the exclusion of all other diseases. On Halifax Farm, situated three miles from Weldon, I found sixteen cases of intermittent fever in the wards of the male and female hospitals. On Northland Farm, two and a half miles from Halifax, directly on Roanoke river, I found eleven cases of intermittent fever, and from examination of case-book of hospitals on both farms I found malarial trouble prevailed during the months of January, February, March and April. This state of affairs still continued until I began to investigate the source of the water supply. From January 1st until August 31st there was a force of convicts working on the dikes of Roanoke river, on Northampton Farm, directly

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opposite the town of Halifax, using spring water, and in the month of June (the force averaging 70 men) there were thirty-nine cases of intermittent and one of remittent fever. From the 1st to the 31st of August I had the drinking-water carried from the quarters, two miles distant, in barrels, and strange to relate, not a single case of malarial trouble occurred. After this time, the force having completed the dike, were put to work on the farm, using spring water on different parts of the plantation, and, as the result, intermittent fever again manifested itself.

On several places on this farm they have driven pumps, and when I could get the overseers to get their water supply from *them*, which necessitated a little more trouble and distance to carry, the change was very gratifying and the sickness amounted to almost nothing.

On Halifax farm, from January 1st until May 1st, 1894, there were fifty-one cases of intermittent fever; from January 1st to May 1st, 1895, five cases. This result I attribute to water used from driven pumps.

On Northampton farm, from January 1st until May 1st, 1894, there were one hundred and twenty-one cases of intermittent fever; from January 1st to May 1st, 1895, thirty-two cases. Prior to May, 1894, there were several cases of hemorrhagic malarial fever, or, as the natives term it, "*yellow chills*," among employees and convicts on Northampton farm, and one last August which proved fatal, on an adjoining farm. I did not see the case (not doing any private practice), but I learned the water supply was derived from springs and surface wells.

On the 1st of June, 1894, the Roanoke Rapids Power Company hired fifty-five convicts from the Penitentiary authorities to do some excavating—digging a bulkhead to convey the water from the canal to the river, furnishing the water power for two large mills that are now in course of construction. Unfortunately, the camp was located in a very unhealthy situation between two canals and a low, marshy bottom on the east, subject to overflow from Roanoke river. I will say here that I had nothing to do with the location of this camp, and after I was assigned to the medical care of the same I protested against the location, as figures will show.

For the first month there were thirty-one cases of intermittent fever, eleven cases of dysentery and twenty of diarrhœa. I was fully aware that in orr ganizing a new camp, with men fresh from the Penitentiary, the greate-portion not accustomed to work, being sneak-thieves and loafers around the towns, there would be more or less sickness until they became accustomed to the work, but I was not prepared to find this amount, and I began to think the trouble must be due to the water. After investigation, I found they were using water from a spring and an open shallow well. This I ordered stopped, with a very gratifying decrease in the amount of sickness for July.

Since then the health of the camp has steadily improved and I seldom have intermittent fever to contend with. I am not a prophet nor the son of a prophet, but I predict, and that in the near future, the malarial problem will be solved simply by the use of good drinking-water.

REPORT OF THE CHAIRMAN ON GYNÆCOLOGY.

By A. H. Harriss, M.D., Wilmington, N. C.

Gynæcology though classed among the specialties is a branch of medicine and surgery, of which every general practitioner must have some knowledge, therefore as a ruling of this Society, some member is annually appointed on this subject. The literature of gynæcology for the past year has not been very voluminous, consequently what few improvements have been made have been obtained with great difficulty, as the majority have never been reported. My object is to eliminate everything that would not be of some practical value to some member, if not every member of this Society. I ask your kind forbearance and indulgence, hoping that I may be able to entertain you for the short time allotted me. The subject of my paper is "Some recent Ideas in Gynæcology," which will cover chiefly, points in treatment; the diagnosis and prognosis being familiar to you all.

A diseased condition frequently met with, especially among our colored population is the uterine fibroid. These tumors are an out-growth from the muscular and connective tissue of the uterine wall and according to their location thereto, are divided into *submucous*, when they are found projecting into the uterine cavity, *interstitial*, when they develop wholly within the wall of the uterus, and *subperitoneal*, when they project from the outer wall of the uterus into the peritoneal cavity. Another division which is clinically important, since it concerns both the growth of the tumor and the treatment to be adopted, relates to the character of the tissue composing the tumor mass, viz; (a) *soft* or myomatous growth, when muscular tissue predominates, and (b) hard or fibromatous growths when they are composed of connective tissue, and are hard and fibrous in structure. Fortunately the myomata and fibro-myomata yield more readily to treatment than those which are denser in structure. The important question wnich arises in dealing with these growths, is when is interference demanded? And what treatment is indicated? Of late much has been claimed for electricity in the treatment of this diseased condition. It would be obviously incorrect to treat all fibroids in the same manner for they are not alike, either in structure or the amount of inconvenience they give rise to. I will take up separately the indications for the different methods usually adopted at the present time, since many are of the opinion that palliative measures should preceed radical operative interference I will take up first the indications and mode of application of electricity. It being easier to cope with these growths when they are small, and the best results having been obtained at this stage the early application is of great importance. There are two principle methods of

applying this agent, viz: Intra-uterine application and vaginal puncture. The purpose of the intra-uterine application is:

1. Cure of coexisting endometritis.
2. Loosening of adhesions between contiguous peritoneul surfaces.
3. Relief of pain and pressure symptoms,
4. Control of hemorrhage.
5. Arrest and retrogression of the growth.

This method of application sometimes effects considerable diminution in the size of the growth, but much more is claimed for vaginial puncture as it submits the structure directly to the polar action of the current. It is important to discriminate in the choice of the pole to be employed. When the structure is hard and fibrous, the *negative* pole is to be employed, and when it is soft and myomatous the positive pole is indicated. In very large tumors when retrogression cannot be expected, if the general health has become deteriorated, electricity serves a useful purpose in building up the general health of the patient to a point where an operation for the removal of the tumor will be tolerated. In submucous fibroids electricity is indicated before their removal, only when they are not sufficiently separated from the walls of the uterus to admit of removal.

Curettage is indicated when hemorrhage is excessive and is of much diagnostic value since it is usually done under an anæsthetic and the dilatation enabling the operator to more positively locate the seat and character of the growth. It is likewise indicated when bleeding persists under appropriate electrical treatment as it removes the mucus and any pus that might be present. If the bleeding persists a thorough removal of the diseased mucous membrane by means of the curette, or the chemical galvano caustic applications, or its character completely changed by the application of cupric electrolysis. This method should never fail if all parts of the cavity can be reached, for the reason that not only is an astringent salt, (the oxy-chloride of copper) liberated in the cavity, but the cataphoric action of the current drives it into the tissues beneath the surface, to a considerable depth. Should hemorrhage persist in spite of these measures we need not feel compelled to perform a hysterectomy, merely to control it, as we may resort to ligation of the uterine arteries per vaginum, as suggested by Martin, of Chicago. This procedure in addition to controlling the hemorrhage should produce a very considerable shrinkage of the tumor as these vessels furnish the uterus with its principle blood supply. We must not however lose sight of the fact that these tumors derive an extraneous blood supply from adhesions with adjacent viscera. This is one reason why curettage alone will not always permanently control the hemorrhage in these cases. Ergot is of great value if used as an auxiliary in certain submucous and soft interstitial myomata when it is desirable to excite uterine contraction. Hysterectomy is particularly indicated in the very large and hard interstitial, as well as subperitoneal growths

which yield little, if at all to any form of treatment. If the pressure of the tumor causes only slight hemorrhage, which is readily controlled from time to time and is not large enough to give other inconvenience and the tumor not increasing in size, hysterectomy need not be considered necessary especially if the patient is nearing or has passed the menopause. When these tumors are complicated by purulent accumulations in the appendages, electricity is contra-indicated, and hysterectomy holds out the only chance for relief. This complication may be unsuspected until the attempt is made to employ galvanism, when the sharp reaction which follows warns the operator not to attempt a repetition. This serves a useful purpose, as a means of diagnosis in these cases. The removal of the appendages for the purpose of inducing an artificial menopause, in the belief that this will exert a favorable influence upon the tumor, has not been been productive of satisfactory results. In the majority of cases the hemorrhage is not immediately arrested, but on the contrary is sometimes more profuse afterwards, the tumor remaining unchanged. In the most favorable cases, several years elapsed before menstruation ceased entirely. After the abdomen is opened and the appendages are removed, it usually involves very little additional risk to remove the tumor also unless the uterus and tumor are found to be extensively and inseperably attached.

I could probably not better close this portion of my paper, especially that relating to the electrical treatment, than to read you the article of Dr. H. F. Currier, which appeared in this month's number of The American Journal of the Medical Sciences, criticising the work of Dr. Geo. Apostoli,—as follows:

In this work Apostoli has collected the contributions to gynæcological electro-therapy which have appeared in the various American and foreign journals, during the past eight years. There is nothing new in this compilation to those who have followed the development of the subject during the period in question. It is simply a collection in a single language of material which has been already published in some French, or in some other language.

There are some who cannot conscientiously regard the subject with the same degree of ardor and hopefulness which was experienced a few years ago; indeed, we may go furthur, and say there are few who have the same confidence in this form of therapy which they once had. Even the most sanguine enthusiasts speak with less assurance of the therapeutic effects of electricity as applied to pelvic and abdominal disease than they did. What is the cause of this? Partly that the claims as to the utility of electrical treatment were too extravagant; partly that the armamentarium, to be at all efficient, is too costly and complicated ever to be brought into general use; partly that such improvements in surgical techinque have been developed that radical results are possible with far less risk to life than formerly, and with far less outlay of time, if not of money, on the part of the patient. We have looked through this compilation with considerable care, and have

read many of the clinical histories of which the work is largely composed. Some of the statements (those of the Keiths for example) we believe absolutely truthful and credible. They have warranted cases in which fibroid tumors are entirely and permanently cured by electro therapy. There are few who have used this means of treatment who have had a similar fortunate experience. It matters little whether they be told that they have used the agent improperly or not; they have done the best best they could and have failed, and the agent is naturally enough, discredited in their eyes. Now this does not imply that electricity is useless in pelvic diseases, but simply that it canhot supersede surgical measures, for the reason that it is uncertain as to the effects produced. It is distinctly inferior to surgery in many instances in which best means have been tried. It would be a great boon to humanity if a measure involving no risk of life, painless in application, and certain or nearly certain, to bring relief for the trouble for which it was employed, could be found; but electricity has not as yet answered those conditions, though it has been asserted, it would. A very useful field is, however, opened to electricity in the treatment of the minor forms of pelvic disease and in the palliative and preparatory treatment, in not a few instances of the more aggravated forms, but Apostoli himself concedes with greater frankness than some of his followers, that its scope is more circumscribed than he was in the habit of admitting a few years ago. We have no sympathy with those who decry electricity as useless or invariably harmful. Such assertions usually come from those who are prejudiced against it, and who are either without experience in its use or so biased that careful observations of its effects *pro* and *con* would hardly be possible. We shall welcome from Apostoli, or any other source, any information and experience which will demonstrate conclusively that it has *latent* virtues which have not yet been discovered; but until then we can see no possibility of its holding any position but a subordinate one in surgery.

Among the recent ideas is a new method of treating vesico-vaginal fistulæ by operation from within the bladder as advocated by Dr. Bond. The most suitable cases for treatment by this method are those in which extensive cicatricial contraction has occurred; in such cases the vaginal roof is tightly streched across the pelvis and the neck of the uterus cannot be drawn down; if, under these conditions the fistulæ be extensive and situated high up near the uterus, considerable advantage is claimed for the new method. As regards the new operation itself. The bladder may be first injected, the finger of an assistant blocking the fistulous opening; if this be impossible a vertica lincision may be made just above the pubes, care being taken not to injure the peritoneum. If necessary the recti may be partially divided and then drawn outward. The walls of the bladder are now held apart and the cavity opened by three long curved metal retractors and by this means and upward pressure by the assistant's finger in the vagina the fistulæ and

field of operation can be brought well within reach: the third cicatricial junction of the two mucous membranes is now incised all around and the flaps of vesical mucous membrane are raised out on either side of the rent with their edges turned inward towards the bladder, and are sutured with catgut on a double curved needle, such as is used for cleft palate suture; care must be taken at the angles to extend the separation of the mucous membrane beyond the actual limits of the fistula. A few silver wire sutures are afterwards used to draw the edges of the vaginal mucous membrane together these having been freshened on their vesical surface by the operation within the bladder. It is very important in after treatment to avoid the occurrence of cystitis for which purpose continuous irrigation day and night with warm boracic solution is very useful. After the closure of the fistula a piece of India rubber tubing is passed through the urethra and drawn out above through the supra pubic wound and to the upper end of this is attached the nozzle of the irrigator tube. The tube within the bladder has a few lateral holes cut in that part of its course which is within the cavity of the viscus, and these allow a free current of lotion, both inward and outward. The tube can be gradually dispensed with by first drawing it within the bladder and allowing the supra pubic wound to close and then removing it entirely. The portion of the tubing projecting from the urethra should be sufficiently long to reach a receptacle, so as to prevent wetting the bed and clothing.

The author claims that the supra pubic method offers a surer means of closing the fistulous opening in bad cases. First, because the vesical flaps when raised and turned inward have their surfaces opposite to the direction of the current of urine flowing through the fistula and are thus more tightly closed by its pressure, unlike the flaps formed by vaginal mucous membrane; Secondly, the supra pubic opening especially where combined with the drainage and constant irrigation insures the absence of tension within the bladder. This is a most important factor and is in itself sufficient in some cases to bring about a cure without further operation.

In the May number of the American Journal of Obstetrics and Diseases of Children, it appears that Emmett claims to be the author of this method of treatment. Emmett claims to have adopted this plan of treatment some years ago but failed to bring it before the profession, and foreign gynæcologists trying his suggestion successfully, brought it before the profession claiming it to be original.

In conclusion I desire to read to you a very recent idea of Dr. Kelly's, of the Jno. Hopkins Hospital. It is a new method of closing the wound in abdominal operations and is as follows: The peritoneum is united by interrupted *silk* sutures which are cut short and left in, the muscle and fascia are brought together by silver sutures which are also cut short and left in, the skin is now brought together by the subdermal silk suture. The wound

is dressed by first placing a layer of silver foil next to the wound and over this the usual antiseptic dressing composed of sterilized gauze and cotton which is held in position by the many tail binders or bandages as devised by Dr. Kelly.

The use of the silver foil is the outcome of experiments in the Johns Hopkins laboratory by Dr. Wm Welch, the bacteriologist. He has clearly demonstrated that germs can or will not develop in the neighborhood of a silver wire kept in a test tube while every other portion of the tube is alive with the germs.

Since speaking of hysterectomy in the first part of my paper it may be interesting to also give you Kelly's method of removing the uterus as it facilitates the operation by shortening the time as well as allowing the organ to be more easily manipulated. He first ties the uterine and ovarian arteries on the *left* side and stripping back the peritoneum cuts the organ away from its attachments, pulling it forward and to the right, the arteries of this side are brought well into view being easily tied and the organ removed. The remainder is as for hysterectomy as is usually carried on at the present time, the wound being united and dressed as above described.

REPORT OF COMMITTEE ON LEGISLATION.

Mr. President and Gentlemen of the North Carolina Medical Society:

In May 1893—at the suggestion of your retiring President, Dr. J. W. McNeill, of Fayetteville, made in his annual address—you appointed "A standing Committee on Legislation, whose continual duty it shall be, to arrange, and to advocate before the Legislature, the Governor and others in authority, the necessary laws regulating all sanitary and hygienic demands. Also, to guard against invasion and injury to laws already established for the protection and well being of the people."

But one General Assembly has convened since the appointment of your committee, which, therefore, now submits its first report.

In the March number of the "Bulletin of the North Carolina Board of Health," Dr. R. H. Lewis, secretary of that body, has so well presented very much of what it is needful for us to say, that your committee has decided to adopt the very language of his editorial, and make it the main body of their report.

In paying him this simple yet hearty compliment, of which it is but right to say that he has not been informed, we feel that we are not, thereby, merely *relieving ourselves of labor*, but are simply rendering a just tribute to his able, indefatigable, zealous and watchful care for the interests of the entire profession throughout the State. It is no more than *the simple truth*, and not at all in fulsome praise or flattery, when we say, that, next to the lamented Thomas F. Wood, of blessed memory! Dr. Lewis has done more than any other member of our profession, in securing the amendments of recent years which have so improved our medical laws. To his experience, his wisdom, his tact in approaching legislators and influencing legislation, your committee feels that the profession owes much of what is best among the statutes which give us protection to-day, as well as the defeat of several hurtful and sweeping amendments proposed last winter; and we gladly acknowledge, also, the value of his counsel and coöperation during the recent session of the General Assembly.

In the Bulletin cited above, Dr. Lewis writes as follows:

"PUBLIC SENTIMENT AND OUR HEALTH AND MEDICAL LAWS."

"Those who have had most at heart the preservation in the integrity of the excellent laws now upon the statute books of our State bearing upon the subjects of sanitation and the practice of medicine have always felt more or less trepidation upon the assembling of each Legislature lest they should be abolished or fatally amended. This feeling of anxiety has arisen from the

fact that the laws being of a more or less technical character, and therefore hard to explain to laymen, especially by any one not thoroughly familiar with their *raison a'etre* and their practical working, any general discussion of them would be liable to result in injudicious and hurtful changes. But the main trouble has been the indifference of the legislators on these subjects because of the want of interest in them manifested by the constituents. Such being the general attitude of this body, it is easy to understand how little resistance might be made to a bill urged by a member of more or less influence and popularity. Almost invariably the motive for the introduction of the amendment or of the special act practically setting aside the law, in part, at least, is to accommodate some individual constituent of the member, and this, too, with an utter disregard of the effect upon the State at large. It is the work of the mere politician as contradistinguished from the statesman, but has not met the sympathy or support of the majority. We do not wish to be understood as complaining of our Legislatures. On the contrary, we have every reason to be grateful when we call to mind the fact that we have the best medical license law in the country, and have had it longer than any other State, and health laws in advance of public sentiment. Our object has been to set forth the reasons for the feeling of anxiety referred to in the beginning.

"When the political revolution of last fall occurred, and a new element came into power, our fears were naturally increased. But they proved to be entirely groundless. It was soon developed that our laws had many and powerful friends in each of the three parties represented. Among these many friends we feel that it would not be making any invidious comparison to particularly mention our County Superintendent of Tyrrell, Dr. Ab. Alexander, who was the representative from that county, and who, as chairman of the Committee on Public Health of the House, proved indeed a faithful sentinel upon the watch tower. Quite a number of bills inimical to our medical and health laws were introduced, but if we are not misinformed only one—a special act authorizing two men to register who had failed on their examinations for license—passed, and that so amended as to permit their registration as soon as they obtained license—a privilege they possessed before the Legislature met.

"The occurrences which were specially gratifying and reassuring, as showing the state of public sentiment in favor of our laws, were these:

"A bill was introduced requiring our Board of Medical Examiners to issue license to any one presenting a license from any other State. To those not familiar with the fact that the States with whom we would be willing to reciprocate in this matter could be counted on the fingers of one hand and leave digits unused, this was a very fair sounding bill. It was withdrawn from the Committee on Public Health and referred to the Judiciary Committee, which was composed of not lawyers only, but farmers and men following other vocations. When it came up, we were told by a member of the

committee, it was reported adversely, and that, too, by a very large majority. And he added that the Populist members were more outspoken in their opposition to any change whatever in our medical license law than any others. The significance of this lies in the fact that those belonging to the People's Party were in large part farmers themselves, and represented the most conservative element in every population, the element that is always most difficult to induce to take hold of any new thing.

"Again, a bill to repeal the Act Relating to the Board of Health was introduced by the most prominent farmer in either house, himself a member of the majority, and the same committee promptly recommended that "this bill do *not* pass." Now while the leading men in the Legislature had had their attention called to the inadvisability of having our medical and health laws amended in any particular, and the desire had been expressed that any attempts in that direction should, if possible, be defeated in the committees in order to avoid a general discussion for the reasons set forth above, no outside friend of our laws appeared before the Judiciary Committee in either of the two instances just mentioned. In other words, the committee did not need any urging or persuading to continue to the people the protection afforded under our present statutes; they did it of their own motion.

"Another instance, still more reassuring, as showing the temper of the whole House of Representatives, was this: A bill to regulate the practice of medicine in Stokes and Surry counties, introduced doubtless in the intrest of a number of illegal practitioners in that locality, was reported to the House favorably by the Committee on Propositions and Grievances, but notwithstanding the favorable report it was promptly tabled. A similar bill applying to the whole State was also laid upon the table in the Senate.

"The statement of facts made above warrants, in our opinion, the belief that we at last have the people with us—that they realize and appreciate the value and importance of the laws enacted for the purpose of protecting their health and lives. If our confidence is not misplaced we can venture, when the Legislature meets again two years hence, to ask for still further improvements in our legal machinery."

In addition to the special act permitting two unlicensed medical men to register—*with its proviso*, as above stated—two other bills were ratified, having no special bearing on our medical and health laws, one of which imposes a license tax of ten dollars on every physician in the State, and incorporated in the "Revenue Act," and is in the following language, to wit:

"Sec. 35. On each and every practicing lawyer, practicing physician and dentist the sum of ten dollars ($10.00): *Provided*, that no city, town or county shall levy any additional tax on lawyeas, practicing physicians and dentists."

The other was; An Act for the Cure of the Blind, and provided that two

rooms in the Institution for the Blind at Raleigh, one for males and one for females, be set apart for the curable blind in the State.

After diligent search, we can find no enacment of any other medical law in 1895 than the three already cited. Many amendments were introduced, some of which, if passed, would have practically emasculated the beneficent statutes now in force; but through the watchful energy and intelligence of the many friends of our present laws among the members of the Senate and House, their defeat was secured. To these friends, both medical men and laymen, our profession owes a lasting debt of gratitude; and without intending any disparagement whatever of other physicians, we most heartily endorsé the public acknowledgment, made in the Bulletin quoted above, of the valuable services rendered by Dr. Ab. Alexander, of Tyrrell County, whose ability, tact and good sense, as Chairman of the House Committee on Public Health, deserve emphatic recognition and applause.

Your committee feels that it cannot close this report, without calling to your attention and most warmly commending the interest in the preservation of our present laws, which was manifested by several of the *colored* physicians of the State, and the zealous energy they exerted in persuading tneir friends in both Houses to give their votes against the pernicious amendments proposed by members. Notable, among these men, were Dr. L. A. Scruggs and Dr. E. R. Jefferson of Raleigh; also, Dr.——Williams, of Charlotte, the latter of whom came from his distant home entirely unsolicited and in spite of a severe indisposition, for the purpose of using his influence in helping to preserve the law as it was. All three of these colored physicians are licentiates of our State Board of Medical Examiners.

At your Greensboro meeting in 1894, the following preamble and resolutions were adopted:

"WHEREAS, There are, in our State, fully one hundred persons hopelessly blind because of inflammation of the eyes occurring immediately after birth; and

"WHEREAS, This unfortunate result is largely preventable, being due to the neglect of nurses and midwives. Therefore be it

"*Resolved*: That it is the sense of this conjoint session of the State Board of Health and the State Medical Society, that legislation tending to lessen blindness from this disease, similar to that already enacted in a number of the other States, is desireable.

"*Resolved:* That the Committee on Legislation, of the Medical Society, be requested to use their best endeavors—if, in their judgment, after the assembling of the Legislature in 1895, it be wise to agitate the subject—to secure the passage of such a law."

Your committee considered this matter carefully and advised with friends outside of its membership concerning it; but it was agreed and decided, that—Considering the manifest tendency in the General Assembly towards the introduction of dangerous amendments to existing laws, it was the part of prudence, not to move in this direction *this year*, lest the discussion pre-

cipitated by the introduntion of *any* medical bill, might lead to other and hurtful action. As a matter of fact, a bill for the licensing of midwives was actually framed, and a member of the House had been asked, and had consented, to introduce it. But your committee and other medical friends, who were watching the trend of affairs, successfully exerted themselves to secure its withdrawal, on the conservative grounds just stated. *The time was not ripe for its passage.* The effort to secure the enacment of such a law will be made at some future time, possibly at the next session of the Legislature.

In conclusion, your committee desire to say, that, while they cannot report to you the enacment of any *helpful* medical law this year, they yet feel great satisfaction in being able to remind you of the reassuring and comfortable fact, that our present laws have practically passed unscathed through the session of a Legislature, at whose hands there was much to be feared, and whose personel was the outcome of a political upheaval, the like of which this State has never seen. When you consider this state of facts, and recall the apprehensions so justly entertained last January, you must feel that the profession has sufficient grounds for satisfaction and thankfulness for the *status quo;* nay, more, that a distinct *gain* has been made in the strength of our position, as demonstrated by the fact, that our laws escaped any serious and crippling amendments, in the ordeal through which they passed during the session of the last General Assembly.

Respectfully submitted,

T. S. BURBANK,
HUBERT HAYWOOD,
K. P. BATTLE,
T. D. HAIGH,
A. W. KNOX, Chairman.
} Committee.

ANNUAL REPORT OF THE SECRETARY OF THE NORTH CAROLINA BOARD OF HEALTH FOR THE STATE MEDICAL SOCIETY FOR THE YEAR 1894–95.

The law of the State requires the Secretary of the Board of Health to make biennially to the General Assembly, through the Governor, a report of their work. He is also required by the Board to make to its conjoint session with the State Medical Society an annual report. As the General Assembly and the Society do not meet at the same time the periods embraced in these reports are not synchronous, and the result is that the biennial report overlaps and includes a large part of the report which is made to you in odd years. In consequence of this fact the report of our work for the period embraced between our last meeting and January 1st, 1895, has already been published in the Fifth Biennal Report to the General Assembly, copies of which you will find on the desk of the Secretary of the Society.

Since the first of the current calendar year comparatively little new work has been undertaken. With a Legislature dominated by a new element in our State politics whose attitude towards the public institutions in general, and the Board of Health in particular, was unknown, it was thought to be wisest to pursue a Fabian policy, lest our being to much in evidence might bring disaster upon the labor of years. It is extremely gratifying to be able to say that our fears proved to be entirely groundless. This matter having already been set forth in the Report of the Committee on Legislation, no farther reference to it is required.

The most successful, and in every way encouraging, meeting the Board has ever held was that "with the people" at the Salisbury Health Conference in September last. A full account of the proceedings will be found in the appendix to the Biennial Report. Among the papers read on that occasion were, one entitled "Suggestions on the Prevention of Tuberculosis as we know it To-day," by Dr. S. Westray Battle, of the Board, and another on "Drinking Water in its Relation to Malarial Diseases" by the Secretary. These papers were ordered by the Board to be published in phamphlet form for general distribution, and I had 10,000 copies of each printed from the type already set up for the Biennial Report. Feeling that the people needed instruction in regard to the importance of quarantine and disinfection in contagious diseases as well as in the matters of tuberculosis and malaria, and that we should take advantage of the opportunity to widely spread such information at a trifling cost, I took the responsibility of having the same number of "Instructions for Quarantine and Disinfection" reprinted. I began the distribution by sending a set of the pamphlets to all newspapers in the State with the following letter:

DEAR SIR:—I send you by this mail, under separate cover, copies of two pamphlets published by the Board for general distribution entitled, "Suggestions on the "Prevention of Tuberculosis as we know it To-day," and "Drinking Water in its Relation to Malarial Diseases." If they meet with your approval I would thank you to notice them in your paper, and especially to notify your readers that I would be very glad to send them just as many copies as they will read or agree to distribute among their neighbors. The widest distribution possible of these publications is desired. Anything you can do to help the Board in their work of preventing disease will be highly appreciate by them and by,

Yours very truly,

R. H. LEWIS, M.D., Secretary.

Not having access to most of the papers I cannot tell to what extent the request was complied with, but a number containing the desired notice have been sent me, and no doubt many others were equally kind.

In order to extend as much as possible the distribution, I prepared and had printed 10,000 copies of a circular letter to our physicians.

With a view to an accurate distribution I returned to the Clerks of Court of all the counties in the State for revisal and correction the lists of registered physicians kindly sent me by them in response to my request two years ago. All have been sent back except thirteen. To every registered physician in the other 83 counties I have mailed a copy of each of the three pamphlets and the circular letter, and will mail them to those in the other thirteen as soon as the lists, for which I have written again, come in. To all County Superintendents I have sent them in quantity, and also to those who have written for them with a promise to distribute them. In order to insure the thorough dissemination of the information on all the subjects treated of in the three pamphlets, I have enclosed in each large package a copy of this circular letter:

DEAR SIR:—I send you a number of copies of "Prevention of Tuberculosis as we know it To-day," "Drinking water in its Relation to Malarial Diseases," "Instructions for Quarantine and Disinfection" and circular letter, for distribution. As the Board desires to disseminate the information contained in each as widely as possible among the people, I would thank you to give to each person a complete set of all four. Although a person may express a desire for only one, give him all of them.

If you find you can distribute more, let me know and I will take much pleasure in replenishing your stock. Any efforts to help us in this work would be greatly appreciated by the Board.

Very truly yours,

RICHARD H. LEWIS, M.D., Secretary.

That the publications have been received with much favor is evident from the newspaper notices, which some of you have doubless seen, and still more from the number of applications which I have received for them in response

to the circular letter, and the invitation published in many of the newspapers perhaps all of them. The exact number asked for so far in the applications which give figures, is 4093, varying in quantity from 1 to "300 or more." In addition 22 requests of an indefnite character have come in, such as, for example, "a few," "some," "a great many," "as many as you may please to send," "as many as you can spare," "enough to supply the drug stores of Fayetteville," "a sufficient quantity for a crowd of a thousand expected at the closing exercises of a school," etc. The ten thousand have been already nearly exhausted and the present demand has not by any means been supplied. I believe that 50,000 could be scattered through the State with benefit for the education of the people in these practical sanitary questions. Something on typhoid fever should accompany the publications mentioned above. We already have it in hand in an admirable article on that subject read before the Salisbury Health Conference by Dr. A. R. Wilson, the live and energetic Superintendent of Guilford County, which you will find in the proceedings of that meeting printed in the appendix to the Biennial Report. With the sections of the law especially applying to typhoid fever as an addendum that paper would I am sure do much good. I trust that it may be the pleasure of the Board to order it printed in the same form and sent out with the others hereafter.

If it meet with the approval of the Board it is my intention to send these pamphlets to all the State and County officers, to the professors in all our colleges and high schools, to every lawyer, especially to every preacher, that he may be incited to preach in private to his flock the gospel of physical health, to leading farmers and merchants and to every one who shall ask for them. But after all no class of our citizens can advance the cause of preventive medicine as can our physicians, for the simple reason that they alone can speak *ex cathedra*. It is however a very discouraging fact that many are quite indifferent to the claims of this branch of our calling, and I avail myself of the opportunity afforded by this conjoint session to again appeal to you to lend a hand and help to build up in the profession generally a sentiment favorable to the active promotion of that which has in it such potentialities for good to all the people. We have received gratifying assurances from various sources that the work done in the past year has been the most successful in the history of the Board of Health. With the cordial support and active co-operation of the medical men of the State we can confidently look forward to far greater results. Without it, our best directed and most earnest efforts must prove largely barren and unprofitable.

It will be remembered that the U. S. Marine Hospital Service, through Passed Assistant Surgeon J. J. Kinyoun, extended an invitation to our Board at the last annual meeting, at Greensboro, to send representatives to Washington for the purpose of receiving free a six weeks course of instruction in practical sanitary biology, in the laboratory of the Service.

I am gratified to report that Dr. Albert Anderson, of Wilson and Dr. W. T. Pate, of Gibson Station, applied for the priviledge, and in January last availed themselves of it. They report a very satisfactory experience, and are now fully equal to the bacteriological examinations called for in practical sanitation. They desire to make some return for the privilege enjoyed through the courtesy of our Board by doing a reasonable amount of work for us without charge. Dr. J. Howell Way, of Waynesville, has recently made application to the Board for an appointment to the Laboratory, and as soon as it may mutually suit the convenience of himself and the Superintendent of the Laboratory it will be given him.

The invitation is open to any member of the Society as long as the offer of the Marine Hospital Service, in this matter stands.

REPORT OF THE OBITUARY COMMITTEE.

Robert Lee Payne, M.D.

By C. A. Julian, M.D., Thomasville, N. C.

The death of Dr. R. L. Payne removes a personage familiar to our citizens and conspicuous in the affairs of the North Carolina Medical Society. Robert Lee Payne was born at Lexington, Davidson county, in North Carolina, December 29th, 1834, and was the son of Dr. C. L. Payne, a prominent and influential physician in that place and a grandson of R. L. Payne, of Goochland county, Va. His father and mother were Virginians by birth; the ancestry on the paternal side were English and on the maternal Scotch. He began his literary education at the old Caldwell Institute, Hillsboro, N. C., and continued to prosecute his studies at Davidson College and University of North Carolina. Having thoroughly qualified himself to commence the study of medicine, he was sent to the Jefferson Medical College, Philadelphia, from which Institution he graduated in 1857. He immediately entered his father's office in Lexington, and remained in copartnership with him until his death. After the death of his father he formed a copartnership with his brother, Dr. C. M. Payne (now Rev. C. M. Payne, of Washington, N. C.), then with his son, Dr. R. L. Payne, Jr. Dr. Payne joined the North Carolina Medical Society in 1859, and he helped to lay the deep foundation upon which was reared our grand superstructure.

His attainments were fully recognized by his fellows, and, as an evidence of their high regard, he was elected Vice-President of the North Carolina Medical Society in 1870, Annual Orator in 1871, and in 1872 he was elected for six years one of the Board of Medical Examiners, a position for which his character and experience particularly fitted him. Conscious of the grave responsibility he assumed in this capacity, he made his examinations most thorough, but tempered them with such kindness and sympathy as to remove much of that embarrassment and dread which most young physicians expe-

rience when applying for license. In 1878 the Society conferred upon him their highest honor by electing him as their President. In this capacity he exhibited his strong mind and intellect. Dr. Payne was elected honorary member of the Abingdon Academy of Medicine in 1887. He was elected a member of the North Carolina Board of Health in 1879, and served with distinction for a term of six years. He was again unanimously elected to succeed himself, but declined the proffered honor. He was corresponding member of the Gynecological Society of Boston, of the Meigs and Mason Academy of Medicine, and was examiner of the Confederate Board and Home Guard Board during the late war. For nineteen years he was the attending physician to the Poor House of Davidson county. His natural kindness of heart and his peculiar way well qualified him for this work. Few have possessed more delicate sensibilities, a warmer heart or kinder spmpathies. Especially did his tenderness manifest itself for those unfortunate beings, the poor—none of them were overlooked, none had just cause to feel themselves neglected. There was no selfishness in his ambition; one of his strongest characteristics was his tenderness for everything weak; this was manifested especially toward the young physicians of his acquaintance.

Dr. Payne had other qualifications aside from his chosen profession. His enterprise and activity among his townsmen won for him great admiration and a high regard for his opinion in municipal affairs, and in consequence as often as he would accept, he was elected magistrate and commissioner of his town.

Dr. Payne was a man of scholastic and literary attainments. He applied himself rigidly to every task, and the works from his pen indicate an erudition much more extensive than the ordinary. In 1887, Davidson College, recognizing his ability and scientific attainments, conferred upon him the honorary degree of Master of Arts. He contributed liberally to the transactions of the North Carolina Medical Society and wrote many articles for the North Carolina Medical Journal, *Medical and Surgical Reporter*, *Virginia Medical Monthly*, *Louisville Journal* and most of the leading journals of the day, and in all his writings he exhibited strength of thought, sound commonsense and felicity of expression. His article on Diphtheria deserves especial mention, being pronounced by some of our most successful practitioners as worth more to the physician seeking to cure his patients than all other books and papers combined on the subject. This article, with a paper entitled "The Health of Our School-Girls," were reprinted and largely distributed by the Board of Health in the State.

Dr. Payne, as a practitioner, was eminently successful, faithful, skilled and much beloved, and enjoyed a very extensive practice. His manner in the sick-room was exceedingly nice, for the time being he seemed oblivious to everything else, concentrating the whole of his powerful nature on the one object of his visit—the relieving of his patient.

He devoted his attention largely to surgery and diseases of women, and the profession attested his attainments by sending for him in council in and out of the State. He was quick to respond to a brother physician in distress. He never let an opportunity escape to harmonize the profession about him or to elevate its tone. The Davidson County Medical Society, of which he was President at the time of his death, owes prrhaps more to him than to any other man.

In May, 1856, Dr. Payne married Miss Winifred T. Wilson, daughter of John Wilson, Esq., formerly of Danville, Va. She is a woman of excellent traits, with a generous, warm and loving heart—a fit consort for her noble husband. She, whom none thought could endure the wear of years as long as he, remains to mourn the loss of an affectionate husband. This union was blessed with the birth of five children, four of whom survive him—one son, Dr. R. L. Payne, Jr., on whom the mantle of the father has fallen, and three daughters, Mrs. M. P. Fowle, of Washington, N. C.; Mrs. Fannie T. Sparrow, of Washington, and Mrs. Bessie W. Beckwith, of Plymouth, Pa.

His was a model home, cared for by a devoted husband, a wise and loving father, generous almost to a fault, hospitable to all.

Dr. Payne was a truly honest, upright Christian physician, and remained a faithful and consistent member of the Presbyterian Church until his death. By precept and example he strove to do his part for the honor and glory of his Master. His Christian character, both in life and death, was fully exemplified. From 1861 to the day of his death, he was a Ruling Elder in his Church. He felt the assurance of his reward. His last words were, "Lord Jesus, receive my spirit."

About noonday, on the 25th of February, 1895, word came suddenly that Dr. Payne had been assassinated on the streets of his native town. The news created the greatest sensation and consternation. The people were overwhelmed by so unexpected an event. The profoundest grief was everywhere evinced. Immediately upon hearing of his death, telegrams poured in to the bereaved family from friends and members of the medical profession, expressing their great sympathy and indignation on account of his untimely death. Torn ruthlessly, while yet in his full strength and manly vigor, from his work he loved so well, scarcely before the furrows of age had plowed his noble brow—torn from an affectionate wife and loving family—still his death was calm and resigned. The funeral solemnities were conducted on the 27th of February last. Hundreds of people attended and followed him to his last resting-place. His remains were borne from his grief-stricken home to the church, where appropriate ceremonies were performed by ministers who paid tender and affectionate tributes to his memory. The entire church was hung in mourning. After the remains were viewed by the sad assemblage, the body was placed in the hearse, drawn by the horses that had conveyed him so many weary miles in his daily practice,

followed by the family; after them came all the physicians of the county and from various parts of the State, and the rear was formed by the people of the town and community, who expressed their grief by their silent tears.

That such a life should be stricken down at its zenith seems pitiable, but it is not, when we recall its fullness of labor, the noble record it has left—when we remember how consecrated it was to its Creator, it becomes a marvelous heritage, full of choicest memories which shall live forever.

Your Committee brings to the notice of this Society a tragic death which has touched the sensibilities and awakened the sympathies of the State, a death which has attracted the attention of the Press and Medical Journals of this and other States, but most seriously arrests the attention and sympathy of this body. Within a brief period of time, we have mourned the death of a succession of men eminent by their services, talent and worth. The portals of the tomb had scarcely closed upon the remains of such good and gifted members as Haywood, Pittman, Summerell and others of these contemporaries, e're again they are opened to receive another marked man of our day. A man who stood among us with singular prominence, conspicuous for his moral and Christian character, professional attainments, real merits and acknowledged ability, Robert Lee Payne, Sr., (a man not only familiar to the members of this Society and the people of the State but to the profession of other States,) after mixing and working actively in the meetings of this Society for thirty-five years, and not having reached the natural limits of life assigned to mortals, has ascended to the mansions of the dead, and we will not again see his manly form or be strengthened by his noble presence.

This Society most keenly feels his loss and is deeply sensible that a prince amongst us has fallen. In vain we will wait to find one who measures up fully to his stature in all those fine qualities of heart, head and skill which make the model physician. Few indeed have attracted a larger share of public attention or maintained so long a more substantial professional distinction.

He was remarkable for the simplicity of has nature, for the acumen of his intellect and the breadth of mental grasp. He was endowed with a physical organization in which the elements were so finely mixed that the "outward man" gave us an unmistakable evidence of the perfection of the "inward man." He was the more attractive in his personalities because the virtues and graces which were linked with his high repute in his profession were embellished by a noble bearing and appearance. He was a strong terse writer; he had an extremely delicate sense of honor, his temperament was happy and a sense of rectitude governed his thoughts and acts; his powers of mind

were such that he easily assimilated knowledge, but he had equal capacity to impart information and if his life had been spent in instruction in medical science he would have adorned any chair in our most reputable seats of learning.

Dr. Payne was born in Lexington, N. C., of English and Scotch extraction, December 29th, 1834. His literary education was obtained at the old Caldwell Institute, Hillsboro, N. C., at Davidson College and at the University of North Carolina. He studied medicine under his father, Dr. Charles Lee Payne, and graduated from the Jefferson Medical College, Philadelphia, Pa., in 1857. Such was his success and faithfulness as a student, that he was offered a very fine opening in Philadelphia; but from local attachments and home ties, he was moved to enter upon the practice of his profession in copartnership with his revered father.

After the death of the father he continued to occupy the old office, for a few years in copartnership with his only brother, C. M. Payne, M.D., now the eminent C. M. Payne, D.D., of the Synod of North Carolina, and later associated in partnership for the past seventeen years with his only son Dr. R. L Payne, Jr., making in all nearly forty years of the most faithful service. As a Physician Dr. Payne was tireless in his devotion to his work and to humanity. He fully recognized his obligations to the profession, by preparing himself for its arduous and exacting duties, diligently keeping abreast with the times in research, adorned thoughts and intelligent practice. He was, in all his work, in every way and under all circumstances, strictly *professional*, high-toned, honorable and loyal. He detested all forms of trickery charlatanism and quackery, and most faithfully labored throughout his long and useful life for the elevation of the standard of the medical profession in his native State. Very soon after his graduation he became a member of the North Carolina Medical Society and for thirty-five years labored so wisely as to win for himself the following honors:

He was president of the North Carolina Medical Society, 1878; Vice-President, 1870; Orator, 1871; Member of the Board of Medical Examiners, 1872—1878; Member of the North Carolina Board of Health in 1879—1887, and when he was unanimously, by acclamation, elected to succeed himself, with characteristic modesty, he begged to decline that "some one younger and more capable should be put in his place." Numbers of young physicians in North Carolina will recall his careful, thorough and learned examinations faithfully put and yet coupled with so much sympathy and helpfulness as to prove him a true friend to them. Dr. Payne was a very successful practitioner and a skillful operator. His large heart drew him into the fullest sympathy with the suffering and his firm tender hand was faithfully extended to minister to their needs, giving much of his care to those who could never remunerate him. The grief of the people of Davidson County, at his death was so profound that a multitude attended his funeral—strong men wept

women wailed and on all sides trembling voices murmered "he saved my life," "he relieved my wife," "he cured my child" and "strange irony of fate," his professional care had indeed saved from death the very assassin who took his noble life.

Dr. Payne contributed frequently to medical secular and religious journals. His articles were widely read and commanded respectful attention and exerted a wholesome influence. His reputation and ability won for him compliments from other States, making him Honorary Fellow of the Abingdon Acad. of Medicine; Corresponding Member of the Gynæcological Society of Boston, and the Meigs & Mason Acad. of Medicine. When a school boy he selected as his motto "*Esse quam videri.*" The great sentiment involved in these words very early manifested itself in the formation of his vigorous and beautiful character. He sincerely hated shows, deceptions and hypocracies, was far above any littleness of soul and utterly incapable of a low mean act; as open, upright, honest, high toned, warm hearted and noble minded as men ever become in this world. In short he was a true man—in his great manly body, his strong manly mind and his big manly heart. This made him brave decided and outspoken in his convictions and at the same time patient, forbearing, tender and gentle as a woman in his actions. His influence and example were always on the side of the good, the true, and the right and his causes were ever wise, just and suitable. While a student at Davidson College, Dr. Payne was converted under the preaching of the Rev. Daniel Baker. Soon thereafter he made a credible confession of his faith and joined the church of his fathers. For about forty years he lived in good and regular standing, passing from private member to Deacon and from Deacon to Ruling Elder of the Presbyterian church of Lexington, N. C. At the time of his death he had been Elder for thirty-five years and was the senior officer in the session. He was a sincere believer in the faith of his father, devoted to the church of his choice but liberal and generous to those who differed from him. The marked peculiarities of his religious belief were his full acceptance of the doctrine of sovereignty of God and of his special providence and his sole reliance upon the merits of a crucified Redeemer. We can understand, therefore, how he went from his family altar, where he prayed so earnestly for divine direction and protection, out into the street, where he was shot down suddenly February 25th, 1895, by the hand of the assassin, and when his life blood was pouring from him, he could look up with confidence stronger than death and with the words "Lord Jesus receive my soul," "depart to be with Christ,"—feeling that all was well. "Even so Father for so it seemeth good in thy sight."

Dr. Payne was considerably above the average height, of a large frame, erect, with a large oval face, clear blue eyes, light curly hair, turned to grey in later years, and a fair complexion. His countenance was serious and thoughtful but often lightened with smiles, during relaxation and friendly

intercourse. He was a man of commanding form and presence, of quiet and composed and courteous manner, his talk and conversation that of a refined cultivated Christian gentleman. He left behind him a grief strickened widow and four children. One son Dr. R. L. Payne, Jr., the remaining partner, and distinguished member of this Society, and three daughters, Mrs. M. P. Fowle, and Mrs. Fannie T. Sparrow, of Washington, N. C., and Mrs. Bessie W. Beckwith, of Plymouth, Pa., noted for their graces and accomplishments. In remembrance of the virtues, faithful labors, and the well earned reputation of the husband and father, they have "a legacy far more precious than the gifts of fortune; an inheritance which nothing n this world can impair, and which will be handed down as a priceless heirloom to their latest posterity.

"Leaves have their times to fall,
And flowers to wither at the north wind's breath,
And stars to set;—but all,
Thou hast all seasons for thine own, O Death!"

CONSTITUTION.

ARTICLE I.

TITLE OF THE SOCIETY.

The name and title of this Society shall be "The Medical Society of the State of North Carolina."

ARTICLE II.

OBJECTS OF THE SOCIETY.

The objects of this Society shall be the advancement of medical knowledge, the elevation of professional character, and the promotion of all measures of a professional nature that are adapted to the relief of suffering humanity, and to improve the health and protect the lives of the community.

ARTICLE III.

MEMBERS OF THE SOCIETY.

SECTION 1. This Society shall consist of Active and Honorary members, and Honorary Fellows.

SEC. 2. The Active members shall consist of such regular physicians as have complied, or shall comply with the laws of the State, ratified February 28th, 1889, and shall receive the approval of the Committee on credentials and a two-thirds vote of the members present at the meeting at which their applications for membership are presented. They shall be required to sign the Constitution and By-Laws of the Society, pay an initiation fee of five dlloars, and shall be liable for such dues for defraying the expenses of the Society as the Society may, from year to year, agree upon.

SEC. 3. The Honarary Members shall consist of such regular physicians as have won distinction by their contributions to medical science; those elderly physicians who, prior to their retirement from practice, have displayed a proper interest in the welfare of this Society, or who, by their example, have reflected credit and honor upon the profession. They must receive a two-thirds vote of the members present at the meeting at which their names are presented for election. They shall be exempt from all dues and fines and shall be entitled to all the privileges of the Society except the right to vote and hold office.

SEC. 4. The Honorary Fellows shall consist of such physicians as have been members of this Society for thirty years, and whose dues have been paid during that time. They shall receive a two-thirds vote of the members present at the meeting at which their name is proposed for promotion. They shall be exempt from all dues and fines and shall be entitled to all the privileges enjoyed by active members in good standing.

ARTICLE IV.

OF THE OFFICERS.

SECTION 1. The officers of this Society shall be a President, Four Vice Presidents, a Corresponding and Recording Secretary and a Treasurer.

SEC. 2. They shall be elected by ballot, on the afternoon of the second day of the meeting, a plurality of votes cast being sufficient for election, and shall serve for one year, except the Secretary and the Treasurer, who may serve for three years, or until his sucessor is elected.

SEC. 3. Any nominee for the office of President shall have been an active member of the Society for five years, including the year of his elections, shall have attended two of the three meetings immediately preceding his nomination, including the meeting at which he is nominated; and shall be a member in good standing at the time of his nomination.

ARTICLE V.

DUTIES OF THE OFFICERS.

SECTION 1. The President shall preside at the meetings, preserve order and perform such other duties as pertain to his office. He shall not be eligible for a second term.

SEC. 2. The Vice Presidents, in the order of their rank, shall assist the President in the performance of his duties, and during his absence, or at his request, shall officiate in his place. They shall not be eligible to two terms in succession.

SEC. 3. The Corresponding and Recording Secretary shall conduct the correspondence of the Society, and shall be the custodian of all papers belonging to the Society, except such as appertain to the Treasurer. He shall keep correct minutes of the proceedings of the Society, and shall place them in the hands of the Publication Committee within thirty days after the adjournment of the Society. He shall advertise in two of the leading papers of the State a month in advance all meetings of the Society; and shall, at the same time, mail to each member a notice of the time and place of the meeting, and shall perform all such other duties as usually appertain to his office. He shall receive such compensation as the Society may, from year to year, agree upon.

SEC. 4. The Treasurer shall receive all monies belonging to the Society, and disburse them as directed, preserving vouchers for the same. He shall present annualy a statement of the finances of the Society, which shall be referred to a committee of three members, who shall audit the same and report to the Society. He shall receive such compensation as the Society may, from year to year, agree upon.

ARTICLE VI.

OF THE BOARD OF MEDICAL EXAMINERS.

SECTION 1. All elections to fill vacancies on the Board of Medical Examiners shall be by ballot, a majority of the votes cast being necessary to elect. The election shall be held on the morning of the second day of the meeting.

SEC 2. In the case of vacancies caused by the expiration of term of office, the election shall be for six years, and shall be held during the meeting at which such terms of office shall expire. In the case of a vacancy caused by the death or resignation of a member, the election shall be to fill the unexpired term, and shall be held at the meeting during which the announcement of the vacancy shall have been made.

ARTICLE VII.

OF COMMITTEES AND THEIR DUTIES.

SECTION 1. A committee of three members to be known as the *Committee on Credentials* shall be appointed by the President at the morning session of the first day of each meeting. Their duty shall be to investigate the character and standing of all applicants for membership in the Society, and receive the credentials of any delegates from other State or District Societies, reporting to the Society the names of such physicians as they think proper. They may ask for instructions from the Society in any doubtful case. The report shall be in order at any hour during the session.

SEC. 2. A *Committee on Finance*, to consist of three members, shall be appointed by the President at the morning session of the first day of each meeting. They shall examine the accounts of the Treasurer and report to the Society, making suggestions as to the amount of assessments for the coming year, the remuneration of the Secretary and the Treasurer and such other suggestions concerning the finances of the Society as they may think proper.

SEC. 3 A *Committee on Nominations*, to consist of five members, shall be appointed by the President at the morning session of the second day of each meeting. They shall nominate an *Orator*, an *Essayist*, a *Leader of Debate*, a *Committee on Publication*, an *Obituary Committee*, Delegates to the American Medical Association, the Virginia Medical Association, the South Carolina Medical Association, and such other associations as the Society may determine, all to serve one year; also a *Board of Censors*, to consist of three members and to serve three years.

SEC. 4. The *Board of Censors* shall investigate the professional status of any member of the Society which shall be called in question and presented to them by charges and specifications. Upon the presentation of such charges and specifications they shall organize a medical court, before which the case shall be tried: *Provided*, however, that such Board of Censors shall be empowered to reconcile differences between members before going into a trial

of the case. Should a case come to trial they shall make a report of their investigation to the Society, with such recommendation as they deem necessary and proper.

ARTICLE VIII.

OF THE SECTIONS AND VOLUNTARY COMMUNICATIONS.

SECTION 1. The newly installed President shall, at the last session of each meeting, appoint a member to serve as Chairman of each of the following sections, to-wit: Anatomy and Surgery, Therapeutics and Practice of Medicine, Physiology and Materia Medica, Obstetrics, Gynecology, Medical Jurisprudence and State Medicine, Pathology and Microscopy.

SEC. 2. At any time after the meeting the Chairman of each section may appoint three such members as he may select as his assistants to work up such items as he may designate, confining himself to the general advancement in his section.

SEC. 3. The Chairmen of sections shall send into the Secretary, not later than thirty days previous to each meeting of the Society, the titles of papers to be presented by themselves and their assistants to be used by the Secretary in making a programme for the meeting.

SEC. 4. No paper shall be read before the Society unless the author be present, unless his absence be due to some unavoidable circumstances. A paper presented by proxy may be referred to the Committee on Publication.

SEC. 5. No paper shall be referred to the Committee on Publication until it has been placed in the hands of the Secretary; and the Secretary shall not return any paper accepted by the Society without the consent of the Society, and then he shall take a receipt for the same.

SEC. 6. No paper shall be received by or read before this Society that has been presented to any other Society, or that has been offered for publication in any journal; and in the case of any paper accepted the author is supposed to have invested with the Society all rights to its ownership.

SEC. 7. No paper shall be published in the Transactions of this Society unless approved by the Committee on Publication; and any paper rejected by said committee shall be returned to the author through the Secretary of the Society.

SEC. 8. It is to be understood that the Society is not to be considered as endorsing all the views and opinions advanced by the authors of papers published in the Transactions of the Society.

ARTICLE IX.

OF THE FUNDS.

SEC. 1. Funds for defraying the expenses of the Society shall be raised by annual assessments on the active members.

SEC. 2. Each active member shall, after being duly elected and signing the

Constitution, pay the sum of five dollars as an admission fee, and be subject to the annual assessment of the Society, except for the year of his admission.

SEC. 3. Should an active member fail to pay the annual assessment two years in succession, he shall be notified by the Treasurer of his delinquency, and if, after this notice, he does not pay his arrearage within sixty days, the Treasurer shall send his name to the Secretary and the member shall not be entitled to receive the Transactions until all dues are paid.

SEC. 4. Should a member be in arrears for four years and fail to pay after due notice from the Treasurer, his name shall be dropped. *Provided*, he may be re-instated at any meeting after endorsement by the Committee on Credentials, and on the payment of five dollars; and so retain his place on the roll as formerly. But this payment shall not entitle the member to receive the volumes of the Transaetions tnat he has forfeited.

ARTICLE X.

MEETINGS OF THE SOCIETY.

The Society shall hold its meetings annually. The time and place of meeting shall be determined for each succeeding year by a vote of the Society.

ARTICLE XI.

OF THE CODE OF ETHICS

The Society adopts, as a part of its regulations, that part of the Code of Ethics of the American Medical Association which is published by its order.

ARTICLE XII.

PROVISIONS FOR AMENDMENTS

Any proposition for amending this Constitution shall be presented in writing and shall lay over to be acted upon at the succeeding of the Society. If it receives a majority of the votes cast it shall be adopted.

BY-LAWS.

OF THE ORDER OF BUSINESS.

1.—The President, or, in his absence, one of the Vice Presidents in the order of their rank, shall call the Society to order, or in the absence of all these officers a presiding officer shall be chosen by a majority of the members present.

2.—The appointment of a Committee on Credentials aud the Coumittee on Finance.

3.—Report of Committee on Credentials.

4.—Roll call.

5.—Reading of President s Message.

6.—Any business requiring early attention may, by permission, be introduced.

7—Correspondence shall be read by the Secretary.

8.—Written communications upon medical subjects may be read and discussed. This shall include reports from sections as arranged each year by programme.

9.—Oral communications may be read and discussed.

10.—Election of officers.

11.—The selection of a place for the next annual meeting of the Society.

12.—Unfinished business.

13.—Adjournment.

CODE OF MEDICAL ETHICS.

OF THE DUTIES OF PHYSICIANS TO THEIR PATIENTS, AND OF THE OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

ARTICLE I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

SECTION 1. A physician should not only be ever ready to obey the calls of the sick, but his mind ought also to be imbued with the greatness of his mission, and the responsibility he habitually incurs in its discharge. These obligations are the more deep and enduring because there is no tribunal other than his own conscience to adjudge penalties for carelessness or neglect. Physicians should, therefore, minister to the sick, with due impression of the importance of their office, reflecting that the ease, the health and the lives of those committed to their charge depend on their skill, attention and fidelityr They should study, also in their deportment, so to unite tenderness with firmness, and condecension with authority, as to inspire the minds of thei. patients with gratitude, respect and confidence.

SEC. 2. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by peculiar circumstances, should be strictly observed, and the familiar intercourse to which physicians are admitted in their professional visits, should be used with discretion, and with the most scrupulous regard to fidelity and honor. The obligations of secrecy extends beyond the period of professional services; none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance should ever be divulged by the physician except when he is imperatively required to do so. The force and uecessity of this obligation are indeed so great that profetsional men have, under certain circumstances, been protected in their observance of secrecy by courts of justice.

SEC. 3. Frequent visits to the sick are in general requisite, since they enable the physician to arrive at a more perfect knowledge of the disease—to meet promptly every change which may occur, and also to tend to preserve the confidence of the patient. But unnecessary visits are to be avoided, as they give useless anxiety to the patient, tend to diminish the authority of the physician, and render him liable to be suspected of interested motives.

SEC. 4. A phyitcian should not be forward to make gloomy prognostications, because the savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it realy occurs, and even to the patient himself, if absolutely necessary. This office, however, is so peculiarly alarming when executed by him that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the trauquility of the most

resigned in their last moments. The life of a sick person can be shortened, not only by the acts, but also by the words or the manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

SEC. 5. A physician ought not to abandon a patient because the case is thought incurable; for his attendance may continue to be highly useful to the patient, and comforting to the relatives around him, even in the last period of fatal malady, by alleviating pain and other symptoms, and by soothing mental anguish. To decline attendance upon such circumstances would be sacrificing to fanciful delicacy and mistaken liberality, that moral duty which is independent of, and far superior to, all pecuniary consideration.

SEC. 6. Cousultations should be promoted in difficult or protracted cases, as they give rise to confidence, energy and more enlarged views in practice.

SEC. 7. The opportunity which a physician not unfrequently enjoys of promoting and strengthening the good resolutions of his patients, ought never to be neglected. His counsels, or even remonstrances, will give satisfaction, not offense, if they be proffered with politeness, and evince a genuine love of virtue, accompanied by a sincere interest in the welfare of the person to whom they are addressed.

ARTICLE II.

OBLIGATIONS OF PATIENTS TO THEIR PHYSICIANS.

SECTION 1. The members of the medical profession, upon whom is enjoined the performance of so many important and arduous duties toward the community, and who are required to make so many sacrifices of comfort, ease and health for the welfare of those who avail themselves of their services, certainly have a right to expect and require that their patients should entertain a just sense of the duties which they owe to their medical attendants.

SEC. 2. The first duty of a patient is to select as his medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist; and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

SEC. 3. Patients should prefer a physician whose habits of life are regular, and who is not devoted to company, pleasure or any pursuit incompatible with his professional obligations. A patient should also confide the care of himself and family, as much as possible, to one physician; for a medical man who has become acquainted with the peculiatities of constitution, habits and predispositions of those he attends, is more likely to be successful in his treatment than one who does not possess that knowledge.

A patient who has thus selected his physician should always apply for advice in what may appear to him trvial cases, for the most fatal results often supervene on the slightest accidents· It is of still more importance that he should apply for assistance in the forming stage of violent diseases; it is to a neglect of this precept that medicine owes much of the uncertainty and imperfection with which it has been reproached.

SEC. 4. Patients should faithfully and unreservedly communicate to their physician the supposed cause of their disease. This is the more important, as many diseases of a mental origin simulate those depending on external causes and yet are only to be cured by ministering to the mind diseased. A patient should never be afraid of thus making his physician his friend and adviser; he

should always bear in mind that a medical man is under the strongest obligations of secrecy. Even the female sex should never allow feelings of shame or delacacy to prevent their disclosing the seat, symptoms and causes of complaints peculiar to them. However commendable a modest reserve may be in the common occurences of life, its strict observance in medicine is often attended with the most serious consequences, and a patient may sink under a painful and loathsome disease, which might have been readily prevented had timely intimation been given to the physician.

Sec. 5. A patient should never weary his physician with a tedious detail of events or matters not appertaining to his disease. Even as relates to his actual symptoms, he will convey much more real information by giving clear answers to interrogatories than by the most minute account of his own framing. Neither should he obtrude upon his physician the details of his business nor the history of his family concerns.

Sec. 6. The obedience of a patient to the prescriptions of his physician should be prompt and explicit. He should never permit his own crude opinions as to their fitness to influence his attention to them. A failure in one particular may render an otherwise judicious treatment dangerous, and even fatal. This remark is equally applicable to diet, drink and exercise. As patients become convalescent, they are very apt to suppose that the rules prescribed for them may be disregarded, and the consequence, but too often, is a relapse. Patients should never allow themselves to be persuaded to take any medicine whatever that may be recommended to them by self-constituted doctors and doctresses who are so frequently met with, and who pretend to possess infallable remedies for the cure of every disease. However simple some of their prescriptions may appear to be, it often happens that they are productive of much mischief, and in all cases they are injurious by contravening the plan of treatment adopted by the physician.

Sec. 7. A patient should, if possible avoid even the friendly visits of a physician who is not attending to him—and when he does receive them, he should never converse on the subject of his disease, as an observation may be made, without any intention of interference, which may destroy his confidence in the course he is pursuing, and induce him to neglect the directions prescribed to him. A patient should never send for a consulting physician without the express consent of his own medical attendant. It is of great importance that physicians should act in concert; for, although their modes of treatment may be attended with equal success when applied singly, yet conjointly they are very likely to be productive of disastrous results.

Sec. 8. When a patient wishes to dismiss his physician, justice and common courtesy require that he should declare his reasons for so doing.

Sec. 9. Patients should always, when practicable, send for their physician in the morning, before his usual hour of going out; for by being early aware of the visits he has to pay during the day, the physician is able to apportion his time in such a manner as to prevent an interference of engagements. Patients should also avoid calling on their medical adviser unnecessarily during the hours devoted to meals or sleep. They should always be in readiness to receive the visits of their physician, as the detention of a few minutes is often of serious inconvenience to him.

Sec. 10. A patient should, after his recovery, entertain a just and endearing sense of the value of the services rendered by his physician; for these are of such a character that no mere pecuniary acknowledgement can repay or cancel them.

OF THE DUTIES OF PHYSICIANS TO EACH OTHER AND THE PROFESSION AT LARGE.

ARTICLE I.

DUTIES FOR THE SUPPORT OF PROFESSIONAL CHARACTER.

SEC. 1. Every individual, on entering the profession, as he becomes thereby entitled to all its privileges and immunities, incurs an obligation to exert his best abilities to maintain its dignity and honor, to exact its standing and to extend the bounds of its usefulness. He should therefore observe strictly such laws as are instituted for the government of its members; should avoid all contumelious and sarcastic remarks relative to the faculty as a body; and while, by unwearied diligence, he resorts to every honorable means of enriching the science, he should entertain a due respect for his seniors, who have, by their labors, brought it to the elevated condition in which he finds it.

SEC. 2. It is not in accord with the interests of the public or the honor of the profession that any physician or medical teacher should examine or sign diplomas or certificates of proficiency for, or otherwise be specially concerned with, the graduation of persons whom they have good reason to believe intend to support and practice any exclusive and irregular system of medicine.

SEC. 3. There is no profession from the members of which greater purity of character and a higher standard of moral excellence are required than the medical, and to attain such eminence is a duty every physician owes alike to his profession and to his patients. It is due to the latter, as without it he can not command their respect and confidence, and to both because no scientific attainments can compensate for the want of correct moral principles. It is also incumbent upon the faculty to be temperate in all things, for the practice of physic requires the unremitting exercise of a clear and vigorous understanding, and, on emergencies, for which no professional man should be unprepared, a steady hand, an acute eye and an unclouded head may be essential to the well-being, and even to the life, of a fellow being.

SEC. 4. It is derogatory to the dignity of the profession to resort to public advertisements, or private cards, or hand-bills, inviting the attention of individuals affected with peculiar diseases—publicly offering advice and medicine to the poor gratis, or promising radical cures; or to publish cases and operations in the daily prints, or suffer such publications to be made, to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in a regular physician.

SEC. 3. Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine; or to dispense a secret nostrum, whether it be the composition or exclusive property of himself or of others. For, if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mistery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent medicines, or in any way to promote the use of them.

ARTICLE II.

PROFESSIONAL SERVICES OF PHYSICIANS TO EACH OTHER.

SEC. 1. All practioners of medicine, their wives and their children, while under paternal care, are entitled to the gratuitous services of any one or more

of the faculty residing near them whose assistance may be desired. A physician afflicted with disease is usually an incompent judge of his own case; and the natural anxiety and solicitude which he experiences at the sickness of a wife, a child, or any one who, by the ties of consangunity, is rendered peculiarly dear to him, tend to obscure his judgment and produce timidity and irresolution in his practice. Under such circumstances medical men are peculiarly dependent upon each other, and kind offices and professional aid should always be cheerfully and gratuitously afforded. Visits ought not, however, to be obtruded officiously; as such unasked civility may give rise to embarrassment, or interfere with that choice on which confidence depends. But, if a distant member of the faculty, whose circumstances are affluent, request attendance, and a honorarium be offered, it should not be declined; for no pecuniary obligation ought to be imposed, which the party receiving it would wish not to incur.

ARTICLE III.

OF THE DUTIES OF PHYSICIANS AS RESPECT VARIOUS OFFICES.

SEC. 1. The affairs of life, the pursuit of health, and the various accidents and contingences to which a medical man is peculiarly exposed, sometimes require him temporarily to withdraw from his duties to his patients, and to request some of his professional brethren to officiate for him. Compliance with this request is an act of courtesy which should always be performed with the utmost consideration for the interest and character of the family physician and when exercised for a short period all the pecuniary obligations for such service should be awarded to him. But if a member of the profession neglect his business in quest of pleasure and amusement, he cannot be considered as entitled to the advantages of the frequent long-continued exercises of this fraternal courtesy, without awarding to the physician who officiates the fees arising from the discharge of his professional duties.

SEC. 2. In obstetrical and important surgical cases, which give rise to unusual fatigue, anixiety and responsibility, it is just that the fees accruing therefrom should be awarded to the physician who officiates.

ARTICLE IV.

OF THE DUTIES OF PHYSICIANS IN REGARD TO CONSULTATIONS.

SEC. 1. A regular medical education furnishes the only presumptive evidence of professional abilities and requirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and this is often dependent on personal confidence, no intelligent regular practitioner, who has a license to practice from some medical board of known acknowledged respectability, recognized by this Association, and who is in good moral and professional standing in the place in which he resides, should be fastidiously excluded from fellowship, or his aid refused in consultation, when it is requested by the patient. But no one can be considered as a regular practitioner or a fit associate in consultation, whose practice is based on an exclusive dogma, to the rejection of the accumulated experience of the profession, and the aids actually furnished by anatomy, physiology, pathology and organic chemistry.

SEC. 2. In consultations no rivalship or jelousy should be indulged; candor, probity and all due respect should be exercised toward the physician having charge of the case.

SEC. 3. In consultations the attending physician should be the first to propose the necessary questions to the sick, after which the consulting physician should have the opportunity to make such further inquiries of the patient as may be necessary to satisfy him of the true character of the case. Both physicians should then retire to a private place for deliberation; and the one first in attendance should communicate the directions agreed upon to the patient or his friends, as well as any opinions which it may be thought proper to express. But no statement or discussion of it should take place before the patient or his friends, except in the presence of the faculty attending, and by their common consent; and no opinions or prognostications should be delivered which are not the result of previous deliberation and concurrence.

SEC. 4. In consultations the physician in attendance should deliver his opinion first, and when there are srveral consulting, they should deliver their opinions in the order in which they have been called in. No decision, however, should restrain the attending physician from making such variations in the mode of treatment as any subsequent unexpected change in the character of the case may demand. But such variations, and the reasons for it, ought to be cerefully detailed at the next meeting in consultation. The same privilege belongs also to the consulting physician if he is sent for in an emergency when the regular attendant is out of the way, and similar explanations must be made by him at the next consultation.

SEC. 5. The utmost punctuality should be observed in the visits of physicians when they are to hold consultations together, and this is greatly practicable. for society has been considerate enough to allow the plea of a professional engagement to take precedence of all others, and to be an ample reason for the relinquishment of any present occupation. But as professional engagements may sometimes interfere and delay one of the parties, the physician who first arrives should wait for his associate a reasonable period, after which the consultation should be considered as postponed to a new appointment. If it be the attending physician who is present, he will, of course, see the patient and prescribe; but if it be the consulting one, he should retire except in case of emergency, or when he has been called from a considerable distance, in which latter case he may examine the patient, and give his opinion in writing, and under seal, to be delivered to his associate.

SEC. 6. In consultations theoretical discussions should be avoided as occasioning perplexity and loss of time. For there may be much diversity of opinion concerning speculative points, with perfect agreement in those modes of practice which are founded, not on hypothesis, but on experience and observation.

SEC. 7. All discussions in consultation should be held as secret and confidential. Neither by words or manner should any of the parties to a consultation assert or insinuate that any part of the treatment pursued did not receive his assent. The responsibility must be equally divided between the medical attendants—they must equally share the credit of success as well as the blame of failure.

SEC. 8. Should an irreconcilable diversity of opinion occur when several physicians are called upon to consult together, the opinion of the majority should be considered as decisive; but if the number be equal on each side then the decision should rest with the attending physician. It may, moreover, sometimes happen that two physicians cannot agree in their views of the nature of a case, and the treatment to be pursued. This is a circumstance much to be deplored, and should always be avoided, if possible, by mutual concession,

as far as they can be justified by a conscientious regard for the dictates of judgment. But in the event of its occurrence a third physician should, if practicable, be called to act as umpire; and, if circumstances prevent the adoption of this course, it must be left to the patient to select the physician in whom he is most willing to confide. But, as every physician relies upon the rectitude of his judgment, he should, when left in the minority, politely and consistently retire from any further deliberation in the consultation, or participation in the management of the case.

SEC. 9. As circumstances sometimes occur to render a special consultation desirable, when the continued attendance of two physicians might be objectionable to the patient, the member of the faculty whose assistance is required in such cases should sedulrusly guard against all future unsolicited attendance. As such consultations require an extraordinary portion of both time and attention, at least a double honorarium may be reasonably expected.

SEC. 10. A physician who is called upon to consult should observe the most honorable and scrupulous regard for the character and standing of the practitioner in attendance; the practice of the latter, if necessary, should be justified, as far as can be, consistently with a conscientious regard for truth, and no hint or insinuation should be thrown out which could impair the confidence reposed in him, or affect his reputation. The consulting physician should also carefully refrain from any of those extraordinary attentins or assiduities which are too often practiced by the dishonest for the base purpose of gaining applause, or ingratiating themselves into the favor of families and individuals.

ARTICLE V.

DUTIES OF PHYSICIANS IN CASES OF INTERFERENCE.

SEC. 1. Medicine is a liberal profession, and those admitted into its ranks should found their expectations of practice upon the extent of their qualifications, not on intrigue or artifice.

SEC. 2. A physician, in his intercourse with a patient under the care of another practitioner, should observe the strictest caution and reserve. No meddling inquiries should be made; no disingenuous hints given relative to the nature and treatment of his disorder; nor any course of conduct pursued that may directly or indirectly tend to diminish the trust reposed in the physician employed.

SEC. 3. The same circumspection and reserve should be observed when, from motives of business or friendship, a physician is prompted to visit an individual who is under the direction of another practitioner. Indeed, such visits should be avoided, except under peculiar circumstances; and when they are made no particular inquiries should be instituted relative to the nature of the disease, or the remedies employed, but the topics of conversation should be as foreign to the case as circumstances will admit.

SEC. 4. A physician ought not to take charge of or prescribe for a patient who has recently been under the care of another member of the faculty in the same illness, except in cases of sudden emergency, or in consultation with the physician previously in attendance, or when the latter has relinquished the case, or been regularly notified that his services are no longer desired. Under such circumstances, no unjust and illiberal insinuations should be thrown out in relation to the conduct or practice previously pursued, which should be justified as far as candor and regard for truth and probity will permit; for it often happens that patients become dissatisfied when they do not experience

immediate relief, and, as many diseases are unusually protracted, the want of success, in the first stage of treatment, affords no evidence of a lack of professional knowledge and skill.

SEC. 5. When a physician is called to an urgent case, because the family attendant is not at hand, he ought, unless his assistance in consultation be desired, to resign the care of the patient to the latter immediately on his arrival.

SEC. 6. It often happens in case of sudden illness, or of recent accidents and injuries, owing to the alarm and anxiety of friends, that a number of physicians are simultaneously sent for. Under these circumstances, courtesy should assign the patient to the first who arrives, who should select from those present any additional assistance that he may deem necessary. In all such cases, however, the practitioner who officiates should request the family physician, if there be one, to be called, and, unless his further attendance be requested, should resign the case to the latter on his arrival.

SEC. 7. When a physician is called to the patient of another practitioner, in consequence of the sickness or absence of the latter, he ought, on his return or recovery of the regular attendant, and with the consent of the patient to surrender the case.

[The expression, "patient of another practitioner," is understood to mean a patient who may have been under the charge of another practitioner at the time of the attact of sickness, or departure from home of the latter, or who may have called for his attendance during his absence or sickness, or in any other manner given it to be understood that he regarded the said physician as his regular medical attendant.]

SEC. 8. A physician, when visiting a sick person in the country, may be desired to see a neighboring patient who is under the regular direction of another physician, in consequence of some sudden change or aggravation of symptoms. The conduct to be pursued on such an occasion is to give advice adapted to present circumstances; to interfere no further than is absolutely necessary with the general plan of treatment; to assume no future direction unless it be expressly desired; and, in the last case, to request an immediate consultation with the practitioner previously employed.

SEC. 9. A wealthy physician should not give advice gratis to the affluent; because his doing so is an injury to his professional brethren. The office of a physician can never be supported as an exclusive beneficient one; and it is defrauding, in some degree, the common funds for its support, when fees are dispensed with which might justly be claimed.

SEC. 10. When a physician who has been engaged to attend a case of midwifery is absent, and another is sent for, if delivery is accomplished during the attendance of the latter, he is entitled to the fee, but should resign the patient to the practitioner first engaged.

ARTICLE VI.

OF DIFFERENCES BETWEEN PHYSICIANS.

SEC. 1. Diversity of opinion and opposition of interest may, in the medical as in other professions, sometimes occasion controversy and even contention. Whenever such cases unfortunately occur, and cannot be immediately terminated, they should be referred to the arbitration of a sufficient number of physicians or a court-medical.

SEC. 2. As a peculiar reserve must be maintained by physicians towards the public, in regard to professional matters, and as there exist numerous points in medical ethics and etiquette through which the feelings of medical

men may be painfully assailed in their intercourse with each other, and which cannot be understood or appreciated by general society, neither the subject-matter of such differences nor the adjudication of the arbitrators should be made public, as publicity in a case of this nature may be personally injurious to the individuals concerned, and can hardly fail to bring discredit on the faculty.

ARTICLE VII.

OF PECUNIARY ACKNOWLEDGMENTS.

SEC. 1. Some general rules should be adopted by the faculty, in every town or district, relative to pecuniary acknowledgments from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit.

OF THE DUTIES OF THE PROFESSION TO THE PUBLIC, AND OF THE OBLIGATIONS OF THE PUBLIC TO THE PROFESSION.

ARTICLE I.

DUTIES OF THE PROFESSION TO THE PUBLIC.

SEC. 1. As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene and legal medicine. It is their province to enlighten the public in regard to quarantine regulations; the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions in relation to the medical police of towns, as drainage, ventilation, etc.; and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails it is their duty to face the danger and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives.

SEC. 2. Medical men should also be always ready, when called on by the legally constituted authorities, to enlighten coroners' inquests and courts of justice on subjects strictly medical—such as involve questions relating to sanity, legitimacy, murder by poisons or other violent means, and in regard to the various other subjects embraced in the science of Medical Jurisprudence. But in these cases, and especially where they are required to make a post-mortem examination, it is just, in consequence of the time, labor and skill required and the responsibility and risk they incur, that the public should award them a proper honorarium.

SEC. 3. There is no profession by the members of which elemosynary services are more liberally dispensed than the medical, but justice requires that some limits should be placed to the performance of such good offices. Poverty, professional brotherhood and certain of the public duties referred to in the first section of this article, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or by rich individuals, societies for mutual benefit, for the insurance of lives or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege. Nor can it be justly expected of physicians to furnish certificates of inability to serve on juries, to perform military duty, or to testify to the state of health of persons wishing to insure their lives, to obtain pensions, or the like, without a pecuniary acknowledgment. But to individuals in indigent circumstances such professional services should always be cheerfully and freely accorded.

Sec. 4. It is the duty of physicians who are frequent witnesses of the enormities committed by quackery and the injury to health, and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors. Physicians ought to use all the influence which they may possess, as professors in colleges of pharmacy, and by exercising their option in regard to the shops to which their prescriptions shall be sent, to discourage druggists and apothecaries from vending quack or secret medicines, or from being in any way engaged in their manufacture and sale.

ARTICLE II.

OBLIGATIONS OF THE PUBLIC TO PHYSICIANS,

Sec. 1. The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualifications; to make a proper discrimination between true science and the assumptions of ignorance and empiricism; to afford every encouragement and facility for the acquisition of medical education—and no longer to allow the statute-books to exhibit the anomaly of exacting knowledge from physicians, under a liability to heavy penalties, and of making them obnoxious to punishment for resorting to the only means of obtaining it.

List of Members.

In the Order in Which They Signed the Constitution.

(The effort has been made to obtain the correct address of each member of the Society. Any person noting an error or omission in the roster will please inform the secretary of the Society, at Wilmington, giving the proper correction.)

Date of Signing.		
1849	Dr. J. B. Dunn	Raleigh.
1851	" Robt. Gibbon	Charlotte,
1852	" A. B. Pierce	Weldon.
1852	" Allman Holmes	Clinton.
1855	" Peter E. Hines	Raleigh.
1857	" R. H. Winborne	Barnitz.
1858	" Geo. A. Foote	Warrenton.
1859	" Eugene Grissom	Denver, Colorado.
1859	" R. L. Payne	Lexington.
1860	" W. J. Jones	Goldsboro.
1860	" Chas. J. O'Hagan	Greenville.
1860	" J. W. Jones	Tarboro.
1860	" J. K. Ruffin	Wilson.
1867	" Wm. R. Wood	Scotland Neck.
1897	" P. A. Barrier	Mt. Pleasant.
1867	" Geo. L. Kirby	Goldsboro.
1867	" J. F. Shaffner	Salem.
1868	" W. T. Cheatham	Henderson.
1868	" Elisha Porter	Rocky Point.
1868	" F. J. Haywood	Raleigh.
1868	" B. P. Alston	Henderson.
1869	" H. T. Bahnson	Salem.
1870	" W. W. Lane	Wilmington.
1870	" Chas. Duffy	Newbern.
1870	" Wm. J. Love	Wilmington.
1870	" Jas. McKee	Raleigh.
1870	" Willis Alston	Littleton.
1870	" W. J. H. Bellamy	Wilmington.
1870	" Geo. F. Lucas	Currie.
1871	" W. I. Royster	Raleigh.
1871	" Geo. Gillett Thomas	Wilmington.
1772	" Francis Duffy	Newbern.
1873	" A. G. Carr	Durham.
1873	" J. F. Miller	Goldsboro.
1873	" J. M. Hadley	LaGrange.
1873	" J. W. Vick	Selma.
1873	" P. L. Murphy	Morganton.
1874	" Jos. Graham	Charlotte.
1874	" W. H. Lilly	Concord.
1873	" J. H. McMullen	Edenton.
1874	" T. D. Haigh	Fayetteville.
1875	" L. J. Picot	Littleton.
1875	" D. N. Sills	Castalia.
1875	" D. W. Bulluck	Wilmington.
1875	" W. H. Whitehead	Rocky Mount.
1875	" R. H. Speight	Wrendale.
1876	" W. C. McDuffie	Fayetteville.
1876	" Henry Tull	Kinston.
1876	" J. W. McNeill	Fayetteville.
1876	" J. D. McMillan	Lumberton.
1877	" J. D. Roberts	Durham.
1877	" Geo. W. Long	Graham.
1877	" Geo. W. Graham	Charlotte.
1877	" N. S. Stevens	Salem.

1877	Dr.	Richard H. Lewis	Raleigh.
1877	"	J. F. Harrell	Whiteville.
1877	"	A. M. Lee	Clinton.
1878	"	J. R. McClellan	Mooresville.
1878	"	R. J. Noble	Selma.
1878	"	W. H. H. Cobb	Goldsboro.
1878	"	J. H. Tucker	Henderson.
1878	"	E. H. Hornaday	Willow Green.
1878	"	I. W. Faison	Charlotte.
1879	"	I. G. Ector	Friendship.
1879	"	Hubert Haywood	Raleigh.
1879	"	J. M. Covington	Rockingham.
1879	"	S. W. Stevenson	Mooresville.
1879	"	W. P. Beall	Greensboro.
1879	"	A. D. McDonald	Wilmington.
1879	"	S. B. Jones	Charlotte.
1879	"	J. J. Cox	High Point.
1879	"	D. M. Prince	Lumberton.
1879	"	J. A. Sexton	Raleigh.
1879	"	John C. Walton	Reidsville.
1879	"	R. A. Hargrave	Robesonville.
1879	"	Julian M. Baker	Tarboro.
1879	"	Thos. E. Anderson	Statesville.
1880	"	J. M. Stansill	Rockingham.
1880	"	Thomas Hill	Goldsboro.
1880	"	E. de la R. King	Beaufort.
1880	"	J. C. Shepard	Wilmington.
1880	"	W. C. Galloway	Wilmington.
1880	"	T. S. Burbank	Wilmington.
1880	"	R. W. Thomas	Thomasville.
1880	"	C. M. Poole	Craven.
1880	"	J. L. Nicholson	Richlands.
1880	"	A. W. Knox	Raleigh.
1880	"	John Whitehead	Salisbury.
1880	"	S. J. Montague	Winston.
1880	"	W. P. Mercer	Elm City.
1880	"	L. W. Hunter	Sardis.
1881	"	R. F. Whiteside	Hickory.
1881	"	J. A. Regan	Weaverville.
1881	"	G. W. Fletcher	Fletchers.
1881	"	M. H. Fletcher	Asheville.
1881	"	T. M. Jordan	Hookerton.
1881	"	R. L. Payne	Lexington.
1881	"	T. S. Meisenheimer	Morven.
1881	"	T. F. Pharr	Concord.
1881	"	H. B. Weaver	Asheville.
1881	"	A. J. Battle	Wadesboro.
1881	"	J. H. Williams	Asheville.
1882	"	J. R. Irwin	Charlotte.
1882	"	A. R. Wilson	Greensboro.
1882	"	K. P. Battle	Raleigh.
1882	"	R. S. Young	Concord.
1882	"	R. A. Smith	Goldsboro.
1882	"	C. A. Meisenheimer	Charlotte.
1882	"	W. P. Whittington	Asheville.
1883	"	W. W. Faison	Goldsboro.
1883	"	W. O. McDowell	Scotland Neck.
1883	"	N. H. Street	Newbern.
1883	"	J. A. Stevens	Clinton.
1883	"	T. S. Royster	Townesville.
1883	"	I. M. Taylor	Morganton.
1888	"	J. M. Hodges	LaGrange.
1883	"	W. L. Hudson	Dunn.
1883	"	F. R. Harriss	Henderson.
1883	"	H. H. Whitaker	Crisp.
1883	"	G. C. Edwards	Hookerton.

1883	Dr.	E. M. Summerell	Mill Bridge.
1883	"	K. M. Ferguson	Cameron.
1883	"	P. J. Macon	Warrenton.
1883	"	N. M. McLean	Gibson's Station.
1883	"	F. C. James	Bethel.
1883	"	B. L. Long	Hamilton.
1883	"	N. P. Bodie	Durham.
1884	"	W. G. Freeman	Murfreesboro.
1884	"	W. C. Whitfield	Sladesville.
1884	"	J. A. Burroughs	Asheville.
1884	"	F. W. Brown	Greenville.
1884	"	J. W. Long	Richmond, Va.
1884	"	M. P. Perry	Macon.
1884	"	Wm. Edwards	Hunts.
1884	"	G. J. Robinson	Smithfield.
1884	"	M. R. Adams	Statesville.
1884	"	G. T. Sikes	Grissom.
1884	"	W. B. Pritchard	355 W. 58th St, N.Y.
1884	"	J. M. Manning	Durham.
1884	"	H. P. Murray	Salisbury.
1884	"	V. A. Whitley	Concord.
1884	"	G. W. Purefoy	Asheville.
1884	"	M. H. Futrell	Conway.
1884	"	B. F. McMillan	Plainview.
1884	"	J. E. Grimsley	Snow Hill.
1884	"	A. M. Herron	Charlotte.
1885	"	W. N. Hicks	Fish Dam.
1885	"	L. P. Sorrell	Kelvin Cove.
1885	"	J. C. Whiteside	Newton.
1885	"	L. M. Archey	Concord.
1885	"	W, E. Powell	Gastonia.
1885	"	F. W. Hughes	Newbern.
1885	"	L. L. Sasser	Smithfield.
1885	"	E. W. Pugh	Windsor.
1885	"	W. L. Best	Quinerly.
1885	"	S. D. Booth	Oxford.
1885	"	R. T. Spencer	Chalk Level.
1885	"	J. A. Hodges	Richmond, Va.
1885	"	Annie L. Alexander	Charlotte.
1885	"	J. T. Nicholson	Bath.
1885	"	J. M. Hays	Greensboro.
1885	"	A. T. Cotten	Morrisville.
1885	"	A. D. York	Morrisville.
1885	"	J. P. McKay	Averasboro.
1885	"	S. L. Montgomery	Concord.
1885	"	K. Leggett	Hobgood.
1885	"	W. W. Pharr	Query's.
1885	"	J. M. Faison	Faison.
1885	"	J. W. McGee	Raleigh.
1885	"	A. W. Dorsett	Bethany.
1885	"	D. G. Caldwell	Concord.
1885	"	W. B. Crisp	Cliffdale (?)
1885	"	J. M. O'Kelly	Williams Mills.
1885	"	M. F. Fox	Greensboro.
1885	"	D. T. Tayloe	Washington.
1885	"	Zeno Brown	Greenville.
1885	"	F. W. Ritter	Moyock.
1885	"	Mayland Bolton	Rich Square.
1885	"	W. E. Turlington	Benson.
1885	"	S. T. Nicholson	Washington.
1885	"	Fleet J. Cooper	Hives.
1886	"	G. H. Dodd	Clayton.
1886	"	E. Rose Dorsett	Salisbury,
1886	"	B. S. Utley	Holly Springs
1886	"	R. A. Whitaker	Trenton.
1886	"	M. W. Harper	Dunn.

1886	Dr.	H. T. Chapin	Pittsboro.
1886	"	H. H. Harriss	Wake Forest.
1886	"	S. C. McClure	
1887	"	O. D. King	Albemarle.
1887	"	W. D. Pemberton	Monroe.
1887	"	S. S. Daniel	Winton.
1887	"	A. W. Godwin	Raleigh.
1887	"	W. H. Bagwell	Greenville.
1887	"	H. W. Lewis	Jackson.
1887	"	Henry H. Dodson	Milton.
1887	"	S. W. Battle, U. S. N.	Asheville.
1887	"	J. F. Beal	Linwood.
1887	"	W. L. Crouse	Lincolnton.
1887	"	Joe Hill	Arcadia.
1887	"	J. H. Way	Waynesville.
1887	"	R. H. Stancell	Margarettesville.
1887	"	R. A. Patterson	Aurelian Springs
1887	"	J. McDeArmond	Mint Hill.
1887	"	R. J. Brevard	Charlotte.
1887	"	D. McBryde	Maxton.
1887	"	E. C. Register	Charlotte.
1887	"	R. W. Tate	Greensboro.
1887	"	J. D. Croom	Maxton.
1887	"	D. C. Parris	Hillsboro.
1888	"	J. C. Grady	Mt. Olive.
1888	"	J. A. Faison	Raleigh.
1888	"	A. McDougald	Cumberland Mill
1888	"	W. J. Lumsden	Elizabeth City.
1888	"	G. H. Moran	Morganton.
1888	"	N. B. Herring	Wilson.
1888	"	Jas. W. McGee, Jr.	Raleigh.
1888	"	Arch. McKinnon	Lumber Bridge.
1888	"	Duncan Smith	Athens.
1888	"	M. McI. Tatum	Winnie.
1888	"	S. A. Henly	Asheboro.
1888	"	W. A. Monroe	Waxhaw.
1888	"	H. B. Marriott	Battleboro.
1888	"	C. B. Woodley	Kinston.
1888	"	W. S. Anderson	Wilson.
1888	"	A. R. Zollicoffer	Weldon.
1888	"	J. G. Broadnax	Greensboro.
1888	"	Duncan Sinclair	Rowland.
1888	"	J. B. Ashcroft	Monroe.
1888	"	C. H. Lewis	Farmers.
1888	"	E. B. Goelet	Saluda.
1888	"	B. T. Cox	Redalia.
1888	"	A. Cheatham	Durham.
1888	"	Jenness Morrill	Farmville.
1888	"	Thomas Stamps	Lumber Bridge.
1889	"	Isaac Jackson	Whiteville.
1889	"	J. T. J. Battle	Wadesboro.
1889	"	W. V. McCauless	Danbury.
1889	"	Oscar McMullan	Elizabeth City.
1889	"	J. E. Wood	Elizabeth City.
1889	"	Albert Anderson	Wilson.
1889	"	W. B. Fearing	Poplar Branch.
1890	"	W. G. Stafford	Burlington.
1890	"	J. S. Lafferty	Concord,
1890	"	B. W. Hathaway	Avoca.
1890	"	T. L. Booth	Stem.
1890	"	J. H. Marsh	Fayetteville.
1890	"	P. B. Loftin	Bell's Ferry.
1890	"	R. L. Gibbon	Charlotte.
1890	"	W. A. Graham	Charlotte.
1890	"	R. B. Henderson	Wilton.

1890	Dr.	J. L. Ray	Burnsville.
1890	"	C. E. Hillard	Asheville.
1890	"	J. C. Kirkman	Mt. Vernon Springs
1890	"	W. H. Harrell	Williamston.
1890	"	J. L. Egerton	Hendersonville.
1890	"	I. G. Riddick	Youngsville.
1890	"	J. W. White	Wilkesboro.
1890	"	E. G. Moore	Elm City.
1890	"	J. P. Fearrington	Faison.
1890	"	J. J. Mann	Nashville.
1890	"	E. R. Michaux	Greensboro.
1890	"	E. P. Snipes	Jonesboro.
1890	"	E. C. Laird	Haw River.
1890	"	J. P. Munroe	Davidson.
1890	"	R. A. Martin	Roxboro.
1890	"	R. D. Jewett	Wilmington.
1891	"	J. B. H. Knight	Williamston.
1891	"	J. G. Waldrop	Hendersonville.
1891	"	C. Few	Hendersonville.
1891	"	W. F. Chenault	Elmwood.
1891	"	C. G. Nichols	Roxboro.
1891	"	Richard H. Whitehead	Chapel Hill.
1891	"	Jos. L. Laxton	Morganton.
1891	"	Karl von Ruck	Asheville.
1891	"	D. A. Stanton	High Point.
1891	"	A. M. Ballard	Asheville.
1891	"	Jas. A. Turner	Little's Mills.
1891	"	H. Longstreet Taylor	Asheville.
1891	"	J. F. Sanderford	Creedmore.
1891	"	A. O. Jones	Rogers Store.
1891	"	D. I. Watson	Southport.
1891	"	R. C. Ellis	Waynesville.
1891	"	C. Daligny	Newhope Academy.
1891	"	J. H. Wolff	Sylva.
1891	"	W. E. Headen	Chapel Hill
1891	"	W. J. Kloutz	Alexander.
1891	"	D. W. Courts	Reidsville.
1891	"	A. J. Monroe	Jonesboro.
1891	"	J. Y. Fitzgerald	Concord.
1891	"	J. A. Watson	Asheville.
1891	"	W. H. Wilson	Gastonia.
1891	"	H. K. Edgerton	Selma.
1891	"	J. T. Reid	Old Fort.
1891	"	J. C. Black	Pioneer Mills.
1891	"	R. W. Palmer	Gulf.
1892	"	J. Alston Nicholson	Washington.
1892	"	E. L. Cox	Jacksonville.
1892	"	W. J. Harrell	Aulander.
1892	"	P. R. Hatch	Youngsville.
1892	"	G. L. Clark	Clarkton.
1892	"	R. W. Mills	Troutmans.
1892	"	Russell Bellamy	35 W. 31st St, N.Y.
1892	"	W. F. Stokes	Wilmington.
1892	"	W. V. McCauless	Danbury.
1892	"	C. G. Carter	Madison.
1892	"	A. G. Jones	Walnut Cove.
1892	"	Wade H. Atkinson	Selma.
1892	"	G. V. Cate	Taylor's Bridge.
1892	"	Silas P. Wright	Wilmington.
1892	"	K. A. Blue	Laurinburg.
1892	"	H. Johnson	Grifton.
1892	"	A. J. Patterson	Liberty.
1892	"	F. P. Gates	Bayboro.
1892	"	W. R. Mayo	Jamesville.
1892	"	W. E. Fitch	Durham.
1892	"	C. B. Ingram	Mt. Gilead.
1892	"	T. S. McMullan	Hertford.

1892	"	J. B. Shamburger	Candor.
1892	"	Wm. D. McMillan	Wilmington.
1892	"	G. M. Hackles	Mars Hill.
1862	"	E. G. Goodman	El Paso.
1892	"	M. E. Gattis	Auburn.
1892	"	J. Thomas Wright	Salisbury.
1893	"	R. H. Stancell, Jr	Margarettsville.
1893	"	B. W. Burt	Enno.
1893	"	T. B. Williams	Ridgeway.
1893	"	J. R. Anderson	Morganton.
1893	"	M. F. Morphew	Marion.
1893	"	J. F. Highsmith	Fayetteville.
1893	"	G. M. Bell	Wakefield.
1893	"	J. R. Wheless	Centreville.
1893	"	W. B. Bullock	Franklinton.
1893	"	J. C. Jenkins	Everetts.
1893	"	J. A. Matthews	Castalia.
1893	"	F. H. Seawell	Archer Lodge.
1893	"	R. J. Nelson	Robersonville.
1893	"	H. F. Long	Statesville.
1893	"	M. W. Gibson	Taylorsville.
1893	"	Albert Houck	Lenoir.
1893	"	J. P. Brown	Ashpole.
1893	"	S. Hassell	Roper.
1893	"	J. J. L. McCullers	Raleigh.
1893	"	I. M. Ramsay,	Seaboard.
1893	"	W. R. Galey	Graham.
1893	"	J. M. Flippin	Thomasville.
1893	"	C. A. Julian	Thomasville.
1893	"	Jas. T. Rieves	Julian.
1893	"	B. B. Williams	Keyser.
1893	"	W. H. Wakefield	Winston,
1893	"	C. M. Benton	Newton Grove.
1893	"	R. J. Grimes	Bethel.
1893	"	E. F. Strickland	Bethania.
1895	"	H. C. Williams	Aberdeen.
1893	"	R. A. Moore	Moncure.
1893	"	R. L. Davis	Bryson City.
1893	"	W. H. Nicholson	Louisburg.
1893	"	J. E. Malone	Louisburg.
1893	"	Robt. J. Gill	Henderson.
1893	"	R. L. Grattis	Belle Voir.
1893	"	J. G. Blount	Washington.
1893	"	G. A. Renn	Raleigh.
1893	"	W. K. Hollingsworth	Mt. Airy.
1893	"	W. J. Hill	Statesville.
1893	"	J. H. Gibbon	Charlotte.
1893	"	J. M. Templeton	Cary.
1893	"	M. L. Stevens	Enochville.
1893	"	C. N. Roberson	Ascend.
1893	"	J. M. Sloan	Gastonia.
1894	"	W. T. Richardson	Greensboro.
1894	"	J. R. Gordon	Jamestown.
1894	"	C. O'H. Laughinghouse	Greenville.
1894	"	J. R. Hester	Prospect Hill.
1894	"	W. W. McKenzie,	Salisbury
1894	"	W. S. Taylor	Mt. Airy.
1894	"	R. E. Cox	Fremont.
1894	"	J. H. Mease	Canton.
1894	"	Thos. M. Riddick	Woodville.
1894	"	J. D. Jenkins	Penelo.
1894	"	C. L. Jenkins	Conetoe.
1894	"	C. S. Gilmer	Greensboro.
1894	"	G. H. Lewis	Reidsville.
1894	"	L. D. Wharton	Greensboro.
1894	"	B. F. Hallsey	Roper.
1894	"	O. B. Stroud	Ore Hill.
1894	"	C. T. Harper	Baltimore, Md.

1894	"	J. D. Edwards	Siler City.
1894	"	W. C. Steel	Mt. Olive.
1894	"	C. E. Walker	Huntersville.
1894	"	W. J. Vestal	Tyro Shops.
1894	"	Jno. E. Logan	Greensboro.
1894	"	W. J. Jones, Jr	Goldsboro.
1894	"	W. C. McCauless	Danbury.
1894	"	A. A. Kent	Lenoir.
1894	"	A. E. Ledbetter	Greensboro.
1894	"	D. A. Roberson	Guliford College.
1894	"	A. H. Harriss	Wilmington.
1894	"	W. O. Spencer	Yanceyville.
1894	"	J. A. Meyers	Lexington.
1894	"	L. L. Johnson	Angeline.
1894	"	D. R. Schenck	Greensboro.
1894	"	J. M. Williams	Greensboro.
1894	"	A. J. Crowell	China Grove.
1894	"	T. P. Boaz	Stoneville.
1894	"	G. M. Ivie	Stoneville.
1894	"	G. R. Hughes	Pollocksville.
1894	"	D. J. Hill	Germanton.
1894	"	W. C. Ashworth	Kernersville.
1894	"	G. A. Smith	Siler City.
1895	"	E. H. Sugg	Snow Hill.
1895	"	F. H. Russell	Wilmington.
1895	"	W. E. Murphy	Carr.
1895	"	W. D, Bowen	Bath.
1895	"	Geo. H. West	Weldon.
1895	"	W. L. Kirpatrick	Crab Tree.
1895	"	W. T. Turlington	Fremont.
1895	"	J. S. Brown	Bear Poplar.
1895	"	R. S. McGeachy	Raleigh.
1885	"	C. E. Moore	Wilson.
1895	"	F. W. Whitehead	Scotland Neck.
1895	"	H. A. Royster	Raleigh.
1895	"	Jno. W. Saine	Lincolnton.
1895	"	J. C. Montgomery	Charlotte.
1895	"	W. O. Baskerville	Oxford.
1895	"	Joseph Dixon	Ayden.
1895	"	B. W. Best	Eureka.
1895	"	Jno. Thames	Lexington.
1895	"	J. T. Strickland	Nashville.
1895	"	J. C. Rodman	Washington.
1895	"	Claude M. Jones	Grimesland.
1895	"	F. H. Arthur	Harrell's Store.

HONORARY MEMBERS.

Dr. J. D. Bellamy, Wilmington, N. C.
Dr. Hunter McGuire, Richmond, Va.
Dr. L. McL. Tiffany, Baltimore, Md.
Dr. Thos. J. Moore, Richmond, Va.
Dr. W. T. Howard, Baltimord, Md.
Dr. W. W. Keen, Philadelphia, Pa.
Prof. L. A Sayer, M.D., New York.

HONORAY FELLOWS.

DATE OF SIGNING CONSTITUTION.		AT SESSION OF
1886	Dr. E. M. Littlejohn, Thomasville	1890
1887	Dr. J. M. Lawing, Lincolnton	1891
1855	Dr. J. G. Ramsay, Mt. Vernon	1893

LIST OF MEMBERS ALPHABETICALLY ARRANGED.

Adams, M. R	Statesville	1884
Alexander, Annie L	Charlotte	1885
Alston, P. B	Henderson	1868
Alston, Willis	Littleton	1870
Anderson, Albert	Wilson	1889
Anderson, T. E	Statesville	1879
Anderson, J. R	Morganton	1893
Anderson, W. S	Wilson	1888
Archey, L. M	Concord	1885
Arthur, F. H	Harrell's Store	1895
Ashcroft, J. E	Monroe	1888
Ashworth, W. C	Kernersville	1894
Atkinson, W. H	604 12th St, S. Washington, D, C	1892
Bagwell, W. H,	Greenville	1887
Bahnson, H, T	Salem	1869
Baker, Julian M	Tarboro	1879
Ballard, A. M	Asheville	1891
Barrier, P. A	Mt. Pleasant	1867
Baskerville, W. O	Oxford	1895
Battle, A. J	Wadesboro	1881
Battle, J. T. J	Wadesboro	1889
Battle, K. P. Jr	Raleigh	1882
Battle, S. W	Asheville	1887
Beall, J. F	Linwood	1887
Beall, W. T	Greensboro	1877
Bellamy, Russell	35 W, 31st St., N. Y	1892
Bellamy, W. J. H	Wilmington	1870
Bell, J. M	Wakefield	1893
Benton, C. M	Newton Grove	1893
Best, B. W	Eureka.	1895
Best, W. L	Quimerly	1885
Black, J. C	Pioneer Mills	1891
Blount, J. G	Washington	1893
Blue, K. A	Laurinburg	1892
Boaz, J. A	Stoneville	1894
Bobbitt, W. H	Raleigh	1883
Bodie, N. P	Durham	1883
Bolton, Mayland	Rich Square	1885
Booth, S. D	Oxford	1885
Booth. T. J	Tally-Ho	1890
Booth, T. L	Stem	1890
Bowen, W. D	Bath	1895
Brevard, R. J	Charlotte	1887
Broadnax, J. G	Greensboro	1888

Brown, F. W	Greenville	1884
Brown, J. P	Ashpole	1893
Brown, J. S	Bear Poplar	1895
Brown, Zeno	Greenville	1885
Bullock, W. B	Scranton, Pa	1893
Bulluck, D. W	Wilmington	1875
Burbank, T. S	"	1880
Burroughs, J. A	Asheville	1884
Burt, B. W	Enno	1893
Caldwell, D. G	Concord	1885
Carr, A. G	Durham	1873
Carter, C. G	Madison	1892
Cate, G. V	Brunswick, Ga	1892
Chapin, H. T	Pittsboro	1886
Cheatham, A	Durham	1888
Cheatham, W. T	Henderson	1868
Chenault, W. F	Elmwood	1891
Clark, G. L	Clarkton	1892
Cloutz, W. J	Alexander	1891
Cobb, W. H. H	Goldsboro	1878
Cooper, Fleet J	Hives	1885
Cotten, A. T	Morrisville	1885
Courts, D. W	Reidsville	1891
Covington, J. M	Rockingham	1879
Cox, B. T	Redalia	1888
Cox, E. L	Jacksonville	1892
Cox, J. J	High Point	1879
Cox, R. E	Fremont	1894
Crisp, W. B	Cliffdale	1885
Croom, J. D	Maxton	1887
Crouse, W. L	Lincolnton	1887
Crowell, A. J	China Grove	1894
Daligny, C	Thompsonville	1891
Daniels, S. S	Winton	1887
Davis, R. L	Bryson City	1893
DeArmond, J. Mc	Mint Hill	1887
Dixon, Joseph	Ayden	1895
Dodd, G. H	Clayton	1887
Dodson, H. H	Milton	1886
Dorsett, A. W	Bethany	1885
Dorsett, E. Rose	Salisbury	1886
Duffy, Charles	Newbern	1870
Duffy, Francis	"	1872
Dunn, J. B	Raleigh	1849
Ector, F. G	Friendship	1879
Edgerton, H. K	Selma	1891
Edwards, G. C	Hookerton	1883
Edwards, J. D	Siler City	1894

Edwards, Wm	Hunts	1884
Egerton, J. L	Hendersonville	1890
Ellis, R. C	Shelby	1894

Faison, I. W. Charlotte 1878
Faison, J. A. Raleigh 1888
Faison, J. M. Faison 1885
Faison, W. W. Goldsboro 1883
Fearrington, J. P. Winston 1890
Fearing, W. B. Poplar Branch 1889
Ferguson, K. M. Cameron 1883
Few, C. Hendersonville 1891
Fitch, W. E. Durham 1892
Fitzgerald, J. E. Concord 1891
Fletcher, G. W. Fletchers 1881
Fletcher, M. H. Asheville 1881
Flippin, J. M. Thomasville 1893
Foote, G. A. Warrenton 1858
Fox, M. F. Gilmer's Store 1885
Freeman, W. G. Murfreesboro 1884
Futrell, M. H. Conway 1884

Galloway, W. C. Wilmington 1880
Gates, F. P. Manteo 1892
Gattis, M. E. Auburn 1892
Gattis, R. L. Belle Voir 1893
Gibbon, John H. Charlotte 1893
Gibbon, Robert " 1851
Gibbon, R. L. " 1890
Gibson, M. W. Taylorsville 1893
Gill, Robert J. Henderson 1883
Gilmer, C. S. Greensboro 1894
Goelet, E. B. Saluda 1888
Goley, W. R. Graham 1893
Goodman, E. G. El Paso 1892
Goodwin, A. W. Raleigh 1887
Gordon, J. R. Jamestown 1894
Grady, J. C. Magnolia 1888
Graham, Geo. W. Charlotte 1877
Graham, Joseph " 1874
Graham, W. A " 1890
Grimes, R. J. Bethel 1893
Grimsley, J. E. Snow Hill 1884
Grissom, Eugene Denver, Col 1859

Hackler, J. M. Mars Hill 1892
Hadley, J. M. LaGrange 1873
Haigh, T. D. Fayetteville 1874
Hallsey, B. F. Roper 1894

Hargrave, R. A	Robersonville	1879
Harper, C. T	1800 W. Saratoga St., Baltimore	1894
Harper, M. W	Dunn	1886
Harrell, J. F	Whitsville	1877
Harrell, W. H	Williamston	1890
Harrell, W. J	Aulander	1892
Harris, F. R	Henderson	1883
Harris, H. H	Wake Forest	1886
Harris, A. H	Wilmington	1894
Hassell, S	Roper	1893
Hatch, P. R	Youngville	1892
Hathoway, B. W	Avoca	1890
Hays, J. M	Greensboro	1885
Haywood, F. J	Raleigh	1868
Haywood, Hubert	"	1879
Headen, W. E	Chapel Hill	1891
Henderson, R. B	Wilton	1890
Henley, S. A	Asheboro	1888
Herring, N. B	Wilson	1888
Herron, A. M	Charlotte	1884
Hester, J. R	Prospect Hill	1894
Hicks, W. N	Fish Dam	1885
Highsmith, J. F	Fayetteville	1893
Hill, D. J	Germantown	1894
Hill, Joe	Arcada	1886
Hill, L. H	Germantown	
Hill, Thomas,	Goldsboro	1879
Hill, W. J	Statesville	1893
Hilliard, C. E	Asheville	1890
Hines, P. E	Raleigh	1855
Hodges, J. A	Richmond, Va	1885
Hodges, J. M	LaGrange	1883
Hollingsworth, W. K	Mt. Airy	1893
Holmes, Alman	Clinton	1852
Hornaday, E. H	Willow Green	1878
Houck, Albert	Lenoir	1893
Hudson, W. L	Dunn	1883
Hughes, E. W	Newbern	1885
Hughes, G. R	Pollocksville	1894
Hunter, L. W	Sardis	1880
I		
Ingram, C. B	Mt. Gilead	1892
Irwin, J. R	Charlotte	1882
Ivie, G. M	Stoneville	1894
J		
Jackson, Isaac	Whiteville	1889
James, F. C	Bethel	1883
Jenkins, C. L	Conetoe	1894
Jenkins, J, C	Everetts	1893
Jenkins, J. D	Penelo	1894
Jewett, R. D	Wilmington	1890

Johnson, H	Grifton	1892
Johnson, L. L	Angeline	1894
Jones, A. G	Walnut Cove	1892
Jones, A. O	Roger's Store	1891
Jones, C. M	Grimesland	1895
Jones, J. W	Tarboro	1860
Jones, W. J	Goldsboro	1860
Jones, W. J,, Jr	"	1894
Jones, S. B	Charlotte	1879
Jordan, T. M	Hookerton	1881
Julian, C. A	Thomasville	1893
Kent, A. A	Lenoir	1894
King, Ed. de la R	Beaufort	1879
King, O. D	Albemarle	1887
Kirby, Geo. L	Raleigh	1867
Kirkman, J. C	Mt. Vernon Springs	1890
Kirkpatrick, W. L	Crabb Tree	1895
Knight, J. B. H	Williamston	1891
Knox, A. W	Raleigh	1880
Lafferty, J. S	Concord	1890
Laird, E. C	Haw River	1890
Lane, W. W	Wilmington	1870
Laughinghouse, C. O'H	Greenville	1894
Laxton, J. L	Morganton	1891
Ledbetter, A. E	Greensboro	1894
Lee, A. M	Clinton	1877
Leggett, K	Hobgood	1885
Lewis, C. H	Farmers	1894
Lewis, G. W	Fremont	1888
Lewis. H. W	Jackson	1887
Lewis, R. H	Raleigh	1877
Lilly, W. H	Concord	1874
Loftin, P. B	Grifton	1890
Logan, J. E	Greensboro	1894
Long, B. L	Hamilton	1883
Long, Geo. W	Graham	1877
Long, H. F	Statesville	1893
Long, J. W	Richmond, Va	1884
Love, Wm. J	Wilmington	1870
Lucas, Geo. F	Currie	1870
Lumsden, W. J	Elizabeth City	1888
McBryde, D	Maxton	1887
McCauless, W. L	Danbury	1894
McCauless, W. V	"	1892
McClelland, J. R	Mooresville	1878
McClure, S, C		1886
McCullers, J. J. L	Raleigh	1893
McDonald A. D	Wilmington	1879

McDougald, A	Cumberland Mills	1888
McDowell, W. O	Scotland Neck	1883
McDuffie, W. C	Fayetteville	1876
McGeachy, R. S	Raleigh	1895
McGee, J. W	"	1885
McGee, J. W., Jr	"	1888
McKay, J. P	Averasboro	1885
McKee, James	Raleigh	1870
McKenzie, W. W	Salisbury	1894
McKinnon, Arch	Chadbourn	1888
McLean, N. M	Gibson's Station	1885
McMillan, B. F	Plain View	1884
McMillan, J. D	Lumberton	1876
McMillan, W. D	Wilmington	1892
McMullan, Oscar	Elizabeth City	1889
McMullan, T. S	Hertford	1892
McMullen, J. H	Edenton	1874
McNeill, J. W	Fayetteville	1876
Macon, P. J	Warrenton	1883
Malone, J. E	Louisburg	1898
Manning, John M	Durham	1884
Mann, J. J	Nashville	1890
Marriott, H. B	Battleboro	1883
Marsh, J. H	Fayetteville	1890
Matthews, T. A	Castalia	1895
Mayo, W. R	Jamesville	1892
Mease, J. H	Canton	1894
Meisenheimer, C. A	Charlotte	1882
Meisenheimer, T. F	Morven	1881
Mercer, W. P	Elm City	1880
Michaux, E. R	Greensboro	1890
Miller, J. F	Goldsboro	1873
Mills, R. W	Troutman	1892
Monroe, A. J	Jonesboro	1891
Monroe, W, A	Waxhaw	1888
Montague, S. J	Winston	1880
Montgomery, J. C	Charlotte	1895
Montgomery, S. L	Concord	1885
Moore, C. E	Wilson	1875
Moore, E. G	Elm City	1890
Moore, R. A	Moncure	1893
Moran, G. H	Morganton	1888
Morphew, M. F	Marion	1893
Morrill, Jenness	Falkland	1888
Munroe, J. P	Davidson	1890
Murphy, P. L	Morganton	1873
Murphy W. E	Carr	1895
Murray, H. P	Salisbury	1884
Myers, J. A	Lexington,	1894

Nelson, R. J	Robersonville	1893
Nichols, C. G	Roxboro	1891
Nicholson, J, L	Richlands	1880
Nicholson, J. T	Bath	1885
Nicholson, P. A	Washington	1892
Nicholson, S. T	"	1885
Nicholson, W. H,	Louisburg	1893
Noble, R. J	Selma	1878
O'Donoghue, D	Charlotte	1887
O'Hagan, Chas. J	Greenville	1860
O'Kelley, J. M	William's Mill	1885
Palmer, R. W	Gulf	1891
Parris, D, C	Hillsboro	1887
Pate, W. T	Gibson's Station	1885
Patterson, A. J	Liberty,	1892
Patterson, R. A	Aurelian Springs	1887
Payne, R. L	Lexington	1881
Pemberton, W. D	Monroe	1887
Perry, M. P	Macon	1884
Pharr, T. F	Concord	1881
Pharr, W. W	Query	1885
Picot, L. J	Littleton	1875
Pierce, A. B	Weldon	1852
Poole, C. M	Salisbury	1880
Poter, Elisha	Rocky Point	1868
Powell, W. E	Castoria	1885
Prince, D. M	Laurinburg	1879
Pritchard, W. B	355 W. 58th St., N. Y.	1884
Pugh, E. W	Windsor	1885
Purefoy, G. W	Asheville	1884
Ramsay. I N	Seaboard	1893
Ramsay, J. G	Mt. Vernon	1855
Ray, J. L	Burnsville	1890
Reagan, J. A	Weaverville	1881
Register, E. C	Charlotte	1887
Reid, J. T. (D)	Old Fort	1891
Renn, G. A	Raleigh	1893
Richardson, W. J	Greensboro	1894
Riddick, I. G	Youngsville	1891
Riddick, T. M	Woodville	1894
Rieves, Jas. T	Julian	1883
Ritter, F. W	Moyock	1885
Roberson, C. N	Ascend	1893
Roberson, D. A	Guilford Coll	1894
Roberts, J. D	Dade City, Fla	1877
Robinson, G. J	Smithfield	1884

Rodman, J. C	Washington	1895
Royster, H. A	Raleigh	1895
Royster, T. S	Townesville	1883
Royster, W. I	Raleigh	1871
Ruffin, J. K	Wilson	1860
Russell, F. H	Wilmington	1895
Saine, Jno. W,	Lincolnton	1895
Sanderford, J. F	Creedmore	1891
Sasser, L. L	Smithfield	1885
Schenck, D. R	Greensboro	1894
Schonwald, J. T	Wilmington	1880
Seawell, F. H	Earpsboro	1893
Sexton, J. A	Raleigh	1879
Shaffner, J. F	Salem,	1867
Shamberger, J. B	Candor	1892
Shepard, J. C	Wilmington	1880
Sikes, G. T	Grissom	1884
Sills, D. N	Castalla	1875
Sinclair, Duncan	Rowlands	1888
Sloan, J. M	Gastonia	1893
Smith, Duncan	Athens	1888
Smith, G. A	Siler City	1894
Smith, R. A	Goldsboro	1882
Snipes, E. P	Jonesboro	1890
Sorrell, L. P	Kelvin Grove	1885
Speight, R. H	Wrendale	1879
Spencer, R. T	Chalk Level	1885
Spencer, W. O	Yanceyville	1894
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Wood, Wm. R.....Scotland Neck.....1867
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Wright, J. T.....Salisbury.....1892
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[NOTE.—The attention of the Committee on Publication is called to the error on page 28 of the Transactions of 1894. The report of a case credited to Dr. Sykes, should be credited to Dr. A. A. Kent, and that credited to Dr. Kent was made by Dr. Sykes. The Committee regret the error, which was due to confusion of names by the reporter.]

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